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THE
EXTRA PHARMACOPŒIA

MARTINDALE
AND
WESTCOTT

ELEVENTH EDITION

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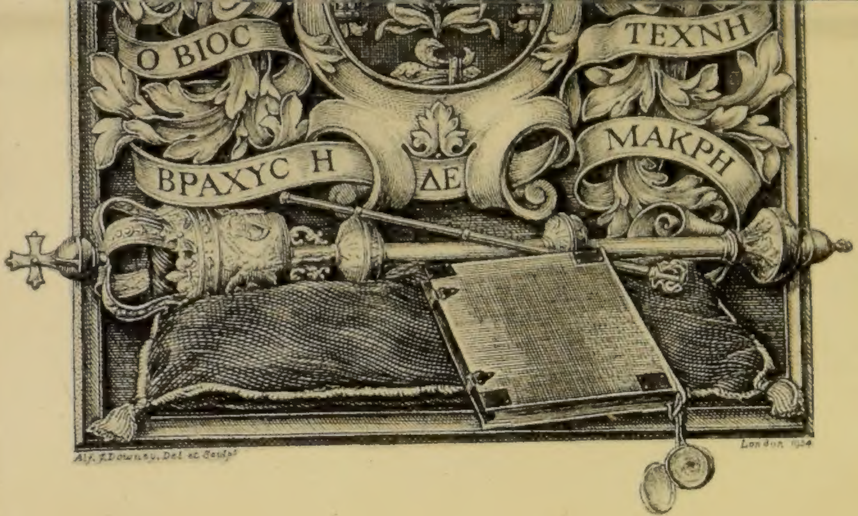
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ΤΕΧΝΗ
ΒΡΑΧΥC Η
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ΜΑΚΡΗ
Alf. J. Downey, Del. et Sculpt.
London 1924

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K. 10

THE
Extra Pharmacopœia
OF
Martindale and Westcott.

REVISED

BY

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AND

W. WYNN WESTCOTT, M.B.LOND., D.P.H.

H.M.'S CORONER FOR NORTH-EAST LONDON.

ELEVENTH EDITION.

ROYAL COLLEGE OF SURGEONS OF ENGLAND
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PREFACE TO THE ELEVENTH EDITION.

SINCE the publication of the Tenth Edition of the 'Extra Pharmacopœia' three years ago, William Martindale, the originator of the book, has passed away from the work in which he took so great an interest. He was held in high esteem both by physicians and chemists, and his lamented death caused a vacant place in the ranks of scientific pharmacists.

The revision of the 'Extra Pharmacopœia' was entrusted by William Martindale to his son William Harrison Martindale, Ph.D., and Dr. Wm. Wynn Westcott, who was his coadjutor in the work from its commencement in 1883. Part of the subject matter was thought to be treated somewhat more fully than necessary in a manual of this nature, and it is hoped that the excisions which have been made from the book will not detract from its usefulness.

Many of the older drugs, chemicals and preparations have been omitted, together with the references to their use. These omissions have permitted the addition of more than three hundred new remedies, drugs and preparations, and have made room for a more detailed account of the many useful therapeutic agents at present employed in treatment.

The size and weight of the volume have been decreased (though it contains 112 more pages than the last edition), so that it may be more conveniently carried in the physician's pocket; this result has been brought about by the employment of a finer paper, without impairing the clearness of the type.

In this edition less space than heretofore has been devoted to the older references taken from Medical Journals; but all possible **New References** to treatment, during the last three years, have been carefully entered.

'Cross references' have for the most part been omitted, so that the enquirer should consult the index for the title required.

In the new section on **Surgical Dressings and Apparatus** it should be noted that, as a rule, the articles there mentioned are not referred to in the body of the work, as heretofore, or in the general index, and thus much additional space has been gained.

Wherever the Latin and English names and synonyms of Chemical and Galenical products closely resemble each other, the **Latin nomenclature** alone remains in the majority of instances.

The **Antidotes to Poisons** are brought out in the text more boldly, while the list of Poisons and their Antidotes in the Therapeutic Index has been enlarged.

The **Index** has been increased by about 1,500 titles, and this without unnecessary duplication.

The mass of **Pharmaceutical Research work** has been carefully abstracted, and the results obtained by British and foreign chemists have been recorded, *e.g.*, in the cases of Aconite, Belladonna, Coca, Cantharis, Colchicum, Digitalis, Hemlock, Hyoscyamus, Indian Hemp, Ipecacuanha, Jaborandi, Nux Vomica, Opium, Senna, Sinapis, Strophanthus, and other important Materia Medica. These abstracts refer to improvements in manufacture, to strengths, standardisation, and methods of assay. There has been a desirable movement in the direction of the possible unification of all pharmacopœias into one of International origin. As to this proposal, the recommendations of the International Conference for the Unification of the Pharmacopœial Formulæ of Potent Drugs and Preparations, held at Brussels in 1902, are marked in this Edition 'C.U.D.'; these are intended to be taken with some reserve, as, naturally, the points raised would be debateable both by foreign pharmaceutical confrères, and by workers in Pharmacy in this country.

The **Medical and Pharmaceutical** literature which has been consulted for this edition includes in addition to the 'British Medical Journal,' 'The Lancet,' the 'Medical Press and Circular,' the 'Pharmaceutical Journal,' the 'Chemist and Druggist,' and the 'British and Colonial Druggist,' also the Pharmacopœias of the Westminster Hospital, 1902; of the King's College Hospital, 1901; of the Victoria Hospital for Children, 1904; of the Great Ormond Street Hospital for Children, 1900; of the Central London Throat and Ear Hospital, 1901; of the London Hospital, 1901; of St. Thomas' Hospital, 1902; of the Throat Hospital, 1901; and of University College Hospital, 1904; the 'Year Book of Pharmacy,' 1902, 1903; Merck's 'Annual Report,' 1902 and 1903; the 'Medical Annual' for 1902, 1903, and 1904; 'Pharmacopedia,' by Edmund White and John Humphrey, 1901; and the 'Digest of Researches and Criticisms bearing on the revision of the British Pharmacopœia,' 1903, by W. Chattaway.

The subject of **Radium**, and the notes on **Röntgen Rays, High Frequency Current, Finsen Lamp,** and **Radiant Heat**, in their important applications to Therapeutics are introduced for the first time in the section entitled '**Radiology.**'

Similarly, fresh monographs appear on Amygdala, Aurinaria, Bougies, Colchicum, 'Collapsubes,' Colocynth, Fel Bovinum, Kino, Krameria, Lecithin, Magnesium, Nebulæ, Oleum Olivæ, Ptomaines, Ranunculus ficaria, Sapones, Senna, 'Sterules,' 'Solubes,' Tablets, Urea, and Valerian.

The Section on **Mineral Waters** comprises information obtained from the pamphlets issued by the various health resorts, regarding the nature, chemical composition, medicinal uses, and 'season' of about 150 mineral waters occurring in various parts of the world, including several of recent exploitation.

The Therapeutic Index has been revised and re-arranged, Internal Remedies are printed in Roman type and those for Local or External use are in *italics.*

The Section termed **Analytical Memoranda** has been rendered more complete by the enlargement of the paragraphs devoted to Tests for the detection of various substances of pathological significance in Urine, whilst those which have fallen out of use or are unreliable, have been omitted. The notes on Blood Testing and Staining are augmented, *e.g.*, the appearances of the corpuscles and other bodies after treatment with Leishman's Stain are detailed. The formulæ for some of the more important Hæmatoxylin and Anilin Colour Stains are given (and indexed in the general index), to enable the dispenser to prepare small quantities of these freshly for the use of the pathologist.

The tests for glucose have been improved by the addition of Gerrard's useful method, and we have arranged a table showing at a glance the amount of glucose present in a specimen of urine, in Gm. per 100 Cc., in grains per fluid ounce, and per pint, indicated on working with this solution.

The **Water Analysis Notes** have been revised to meet the now customary method of reporting in parts per million.

The **Bacteriological Notes** have been corrected up to date by abstracts from the current literature on pathology, and the notes on the examination of stomach contents, appear for the first time.

The recent deaths by Carbon Monoxide, Carbon Dioxide, and Illuminating Gas poisoning have made it necessary to mention the methods of detection of these noxious gases.

At the end of the book a few useful tables have been added.

Of the **Chemicals, Drugs, Galenical Preparations and Modes of Treatment** included in the subject matter which have claimed recent attention, the following may be mentioned :—

Acid Arsenic.
,, Boro-Salicylic.
,, Hydriodic.
,, Hydrocinnamic.
,, Iodic.
Adrenalin.
Anilin-cocaine.
Anilin iodoform.
Albumen, Blood and Egg.
Alginoid Iron.
Amyl Salicylate.
Apiol Preparations.
'Aqueous' Tinctures.
Argyrol.
Aurinaria.
Bilberry.
Beta Eucaine Powders (double strength).
Beta Eucaine Powders, use of, combined with Adrenalin.
Bismuth Salts and Preparations.
Bromopyrin.
Cacodyle Compounds.
Calcium Bromide.
,, Chloride.
Capsulæ Cruoris.
Capsules, Ergot and Apiol.
Capsules, Gelatin and Glass, a large number added.

Cassia Beareana
Celandine (Ranunculus Ficaria).
Celloidin Solution.
Chinosol.
Chloralimide.
Chloral-Tannin.
Citarin.
Cyllin.
Decalcified Bone.
Diacetyl-Morphine Hydrochloride and its Syrup, designated Glycaphorm.
Digitalis Preparations and Glucosides.
Dobell's Collunarium.
Effervescent Caffeine, base 3 gr. in 1 drachm.
Effervescent Sodium Benzoate.
Emulsion of Chloroform and of Paraffin, St. Thomas' Hospital.
Emulsion of Petroleum with Cinnamic Acid.
Ethyl Bromide for anæsthesia.
Ethyl Chloride Tubes for general and local anæsthesia, and with Cocaine, Carbolic Acid and Iodoform.
Ether Soap.
,, ,, with Mercuric Iodide.
Eye-ball Retina, Extract of the.
Faex Medicinalis and various dried Yeasts.
Formalin Inhalant.
Gelatin Injections.
Glucose, Artificial feeding with.
Glycerin of Atropine.
Glycerophosphates in Granule, Glycerol and Tablet form.
Glycogen
Glycosal.
Hay Fever Serum.
High Frequency Current.
Ichthyol Preparations.
Infiltration Anæsthesia by Cocaine, Eucaine and Tropacocaine.
Lævulose.
Lecithin.
Light Treatments.
Linctus of Pine, Terpine and Heroin.
Liquid Glycerin Soap.
Liquor Acidi Chromo-aceto-osmic.
Liquor Eastonii.
'Lithion.'
Löffler's Pigment.
Lofotol.
Lysoform and Preparations.
Magnesium Bromide.
'Maltolivine.'
Mandl's Pigment.
Manganese Bromide, and Scaled Salts of.
'Marrubin' (Glycerin Extract of Red Bone Marrow).
Meat Extracts.
Mercuric Ethylene Diamine.
Mercuric Salicylate.
Mercurous Iodide, Yellow.
Methylene Blue.
Methyl Salicylate Plasters.
Mineral Waters.
Mistura Brominol.
,, Copaibæ.
,, Hydrarg. Biniodidi, King's Coll. Hospl.
,, Paraldehydi.
,, Olei Olivæ, for lubricating intestines.
Mœbius's Anti-Thyroid Serum.
Moschus.
Moss Products as Dressings.
Morphine and Scopolamine Anæsthesia.
Morton's Fluid.
Myelocene.
Mucin.
Nebulæ.
Oleic Acid (Capsules).
Oleum Asepticum.
Oxygen Apparatus.
Oxygen treatment of phthisis.
Paraffin Liq. (capsules) for lubricating catheters.
Paraffin, Sterile, for use in plastic operations.
Pastils, Glyco-gelatin.
Peptonising Pills.
Perles of Izal.
Peroxides for producing oxygen and for internal administration.
Pessaries of Ichthyol, Bismuth, Iodoform, &c.
Phenolphthalein as a purgative.
Physiological Salt Solution, several new formulæ.
Pigments of Iodine.
Pills of Aconitine.
,, Cannabin Tannate.
,, Easton with Arsenic.

Pills of Lithium Guaiacate.
,, Methylene Blue.
,, Potassium Iodide.
,, Silver Nitrate and Morphine.
Pine Oxygen Treatment.
Piperazine Quinate (Sidonal).
Piperidin Salts.
Potassic Aperient.
,, Aperient with Sulphocarbolate.
Potassium Chloride.
,, Nitrite.
Quinic Acid.
Radium.
Resorcin Lotions.
Restorative Beef Essence.
Salicylic Acid Injections.
Saloquinine.
Saloquinine Salicylate.
Sanosin.
Savore.
Silver Acetate.
Silver Fluoride (Takiol).
Silver Leaf for dressing wounds.
Simaba Cedron.
Simaruba.
Serum Anti-plague.
,, Anti-streptococcic.
,, Anti-tetanus.
Sodium Succinate.
'Solubes' for producing Lotions.
Sœmnoforme.
'Sterules.'
Stili Spirituosi.
Strontium Cinnamate.
Suppositories, Supra-renal and Morphine.
Sodium Acid Phosphate.
,, Acid Sulphate.
,, Cinnamate Injections.
,, Glycocholate.
,, Oleate for gall-stones.
,, Sulpho-cyanide.
Syrupus Cocainæ.
,, Iodo-Tannicus.
,, Pini Pumilionis.
,, Triplex.
Tablets, list enlarged.
Taxin.
Tela Vesicatoria.
Tests for Arsenic, Alkaloids, &c.
Theophylline.
Thorium, Emanations for treatment of phthisis.
Thorium, Radiations for malignant growths.
Thymaglycin.
Trochisci, various new.
Trypsin.
Unguentum Crédé.
,, Rumicis.
,, Rusci Compositus
Urea.
Vapores.
Valerian Preparations.
Valyl.
Vernissum Glyco-gelatin.
Veronal.
'Vescettes.'
Vinum Caffeæ Viridis.
,, Cascaræ.
,, Kolæ.
'X' Rays.

in addition to many others, mention of which will be found in the text and index.

The Sections on **Antitoxins and Organotherapy** have been almost entirely re-written; in regard to the former, the important investigations and theories of various eminent bacteriologists have been included, and due acknowledgment is made of the abstracts from standard works.

Of the Antitoxin system of treatment, the Antitoxin of Diphtheria has maintained its reputation; the Tuberculin of Koch for diagnostic purposes, and the new Tuberlin of Koch as a mode of treatment are still in use. The Antitetanic serum for Tetanus is much used abroad, but rarely in this country; and the same may be said of the Anti-Cholera, Anti-Plague, and Anti-Typhoid prophylactics and treatment.

Of the Animal Extracts and Opotherapy the preparations of the Supra-renal Capsules have alone secured attention, and notably the Adrenalin Chloride Solution has found universal praise for its hæmostatic and astringent properties; Red Bone Marrow has also made a reputation, while the Thyroid treatment holds its ground and has been supplemented by an Anti-Thyroid formula.

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May 10th, 1904.

ARTICLES IN THE EDITION OF 1901, BUT OMITTED IN THE PRESENT EDITION.

Aminol.
Amyli Bromidum et Chloridum.
Anæsthol.
Analgene.
Antithermin.
Anthraglucorhein.
Antispasmin.
Anytin.
Anytols.
Apocynin.
Apolysin.
Aspidospermin, crude.
Auri et Potassii Bromidum.
Bismal.
Bismuthi Sulphis.
Caffeinæ Sulphas.
Cascara Amarga.
Chinolini Salicylas.
Chloralum.
Chrysarobin Oxidised, Unna.
Cinchoninæ Iodo-mercuras.
Cocainæ Perbromidum.
Collemplastrum Adhesivum.
,, Salicylicum.
Compound Anæsthetic Ether.
Coryl.
Cosaprin.
Cresol Salicylate.
Crurin.
Eigons.
Eka-iodoform.
Eseridine.
Ethideni Dichloridum.
Eucaine A.
Eucasol.
Ferrinol
Ferri Periodas.
Formaloin.
Gallal.
Gallicin.
Guaiaquinine.
Guttæ Benzol.
Hydracetin.
Hydramyl Ether.
Hydronaphthol.
Iodolene.
Iodo-Salicylic Acids.
Liebreich's Potassium Cantharidate Solution.
Metasol.
Methacetin.
Methylal.
Mistura anti-choleraica.
Morrhuol.
Nasrol.
Oleum Morrhuæ cum Æthere.
Orexin.
Oxols.
Ozone.
Periodate Crystals.
Phesin.
Pigmentum Papainæ.
Pil. Cupri Co
Po-ho-yo.
Potassio-Cobalto-Nitras.
Prunin.
Pyrodin.
Rhamnus Frangula Lozenges.
Rhois Emplastrum.
Rhus Aromatica.
Salumin.
Sodii Cresotas.
Spirone.
Sulphaminol.
Symphorol.
Tannal.
Terebinthinæ et Zinci Pilula.
Thallinæ Periodidum.
Vioform.

And from the List of Drugs of Secondary Importance the following:—

Achyranthes aspera.
Bonduc Seeds.
Carvacrol.
Cornus Florida.
Crotalus.
Eupatorium Perfoliatum.
Eugol.
Gouania Domingensis.
Henna.
Hoang Nan.
Hymenodictyon Excelsum.
Indurjao.
Jacaranda lancifoliata.
Jatropha Curcas.
Manaca.
Mandragora.
Muscarine.
Oliveri Cortex
Pharbitis Nil.
Randia Dumetorum.
Sassafras Pith.
Scillipicrin.
Scillitoxin.
Scutellarin.
Sethia Acuminata.
Siegesbeckia Orientalis.
Tayuya.
Urechites suberecta.

ONS OF ENGLAND

WEIGHTS AND MEASURES.

THE British Pharmacopœia in 1898 adopted a dual system of weights and measures in all its formulæ, namely, the Imperial Weights and Measures and the Metric System.

> "Except for wholly insignificant fractional differences, a preparation made according to either system will contain the same proportions of ingredients; but, as a matter of course, the two systems cannot both be used in the same operation."

> 'The Pharmacopœia, as hitherto customary, employs Imperial measuring vessels graduated at 62° F. (16·7° C), and the official names of Imperial capacity-units as defined at that temperature, together with the official names of metric capacity-units as defined at 39·2° F. (4° C.); while it employs metric measures and volumetric vessels graduated at 60° F. (15·5° C.)."

In this work are given formulæ in 'proportional parts,' solids by weight, and liquids by *measure*, as the dispensing of liquids in Great Britain is always conducted by measuring. Exceptions to this rule are in the abstracted formulæ, and those from unofficial sources (in order not to interfere with the strict accuracy of either); that is, the denomination in other formulæ is omitted. In those, therefore, in which 'proportional parts' are used, the quantities of solids and liquids at 60° F. (15·5° C.) may be taken respectively in grammes and cubic centimetres, ounces and fluid ounces, grains and (to be strictly accurate) grain measures, but minims in place of the latter will, for practical purposes, often be used, and only cause one-eleventh *minus* error.

In the body of the work (but not in the Secondary List or Index) the approximate doses of each drug and preparation in terms of the metric system follow those of the Imperial system. For all practical purposes, a fluid drachm may be considered as 3½ cubic centimetres; 60 grains as 4 grammes; the avoirdupois ounce (about 28⅓ grammes) may be taken as 30 grammes; the fluid ounce as 30 cubic centimetres; and the pound avoirdupois as half a kilogramme (approximately it is nine-twentieths).

In further trying to think in the metric system, prescribers may consider the English grain as 65 milligrammes (0·065 gramme), 1½ grains as 10 centigrammes, and 17 minims as approximately 1 cubic centimetre. (See table, p. xv.)

The following approximations will also be useful:—

85 minims = 5 Cc.* =	1 teaspoon.
255 minims = 15 Cc.* =	3 teaspoons 1 tablespoon.
1020 minims = 60 Cc. =	12 teaspoons 4 tablespoons 1 wineglass.
250 Cc. = 50 teaspoons =	16 tablespoons (about), 4 wineglasses, 1 tumbler.

The word gramme is contracted to **Gm.**, and the words cubic centimetre to **Cc.** The contraction **Gm.** in heavy type and with a capital initial letter distinguishes it from gr., the usual contraction for grain. The latter is only used in the index.

A further exception is made in the case of hypodermic injections. To avoid, also, too great confusion of the two systems the contents of the unofficial ophthalmic lamels are not given in metric terms.

It would be of general advantage if the English term minim (commonly but erroneously understood to be a drop of liquid) were abandoned as it has been in all other scientific work. A drop, as the late W. Martindale suggested

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* These quantities are respectively those recognised by the French Codex for a teaspoonful and a tablespoonful.

(P.J. 1876,679), might be considered as $\frac{1}{20}$ of a cubic centimetre, or about $\frac{1}{3}$ of a minim. Of mobile liquids, such as Ether, Chloroform, Tincture of Digitalis, Almond Oil, and Oleic Acid, a drop is much smaller than that of water (varying, of course, with the neck of the bottle from which it is dropped). In the case of Oleic Acid, Almond, Olive, and other light oils, the 'drop,' on an average, weighs half a grain, and in place of weighing small quantities of these, two drops may for practical purposes be considered as the equivalent of one grain.

At the International Congress for the Unification of Pharmacopœial Formulæ of Potent Drugs and Preparations held at Brussels in 1902, it was decided that the Drop Measure should have an outside diameter of 3 mm., and give (at the temperature of 15°C.) 20 drops of distilled water weighing 1 Gm.—B. and C.D.ii./02,300.

The measure of 1,000 cubic centimetres recognised by the Pharmacopœia is not the same thing as a litre, which is the volume of 1,000 grammes of distilled water at its temperature of maximum density, 4° C. and 760 mm. barometric pressure (B.P. p. 430), whereas the measure of 1,000 cubic centimetres, B.P., is the volume occupied by 1,000 grammes of distilled water at 15·5° C., the difference being that 1 cubic centimetre is stated to be equal to 0·99984 millilitre, a millilitre therefore equals 1·00016 Cc. In the operations of the Pharmacopœia the volume of 1,000 grammes at 15·5° C. is directed to be employed in the place of the standard litre.

The old apothecaries and avoirdupois weights should be abandoned, and it is claimed the change could be rapidly effected,—it is necessary to calculate in metric terms; for example, to realise that the dose of arsenious acid is from 1 to 5 milligrams, that of Tincture of Opium, the single dose is one to two cubic centimetres, that Sodium Bicarbonate is given in quantities of $\frac{1}{2}$ to 2 Gm. and so forth, and the entire system will be quickly assimilated.

It is time that the practice which has grown up of burdening the prescriber with metric equivalents to grains, drachms and ounces should be dropped in favour of metric terms only, which entail far less mental calculation, and hence involve very much less likelihood of error.

The sizes of bottles in most frequent use in France are:—

1,000, 500, 250, 200, 125, 100, 50 and 25 cubic centimetres.

Mixtures may be prescribed in 125, 200, or 250 Cc., or where it is desired to prolong the treatment 500 Cc. is a convenient size; and drops should be ordered in quantities of 60, 30, and 15 Cc.

METRIC WEIGHTS AND MEASURES AND THEIR EQUIVALENTS IN THE BRITISH PHARMACOPŒIA.

1 Gramme (Gm.) ... ... = 15·4323564 grains.
1 Centigramme (Cgm.) ... ... = 0·154323 grain.
1 Milligramme (Mgm.) ... ... = 0·015432 grain.
1 Litre ... ... = 35·196 fluid ounces.
1 Cubic Centimetre (Cc.) ... = 16·95 minims (nearly).
1 Metre ... ... = 39·370113 inches.

The Gramme has its decimal multiples—Decagramme, Hectogramme, and Kilogramme; and divisions—Decigramme, Centigramme, and Milligramme. The Litre and Metre have their corresponding decimal divisions—Decilitre, Centilitre, and Millilitre,—and Decimetre, Centimetre, and Millimetre.

In Continental states, where this system is now generally adopted for the dispensing and preparing of medicines, all liquids are weighed, and the terms Gramme, Centigramme, and Kilogramme only are used. This avoids the possibility of errors, which the similarity of the names Decagramme and Decigramme might lead to.

In Germany the quantities of the ingredients in prescriptions are written in decimal proportions, the gramme being understood to be the unit; the name of the integer is generally not mentioned, thus:

Rhubarb 35· means 35 grammes of Rhubarb.
,, ·035 ,, 35 milligrammes ,,

APPROXIMATE EQUIVALENT DOSES.

WEIGHTS. IMPERIAL TO METRIC.

1/100 grain	=0·00065	gramme	3 grains	= 0·2	gramme
1/64 "	=0·001	"	4 "	= 0·26	"
1/50 "	=0·0013	"	5 "	= 0·32	"
1/40 "	=0·0016	"	6 "	= 0·4	"
1/32 "	=0·002	"	7 "	= 0·46	"
1/30 "	=0·0022	"	8 "	= 0·52	"
1/25 "	=0·0026	"	9 "	= 0·6	"
1/20 "	=0·0032	"	10 "	= 0·65	"
1/16 "	=0·004	"	12 "	= 0·8	"
1/12 "	=0·0054	"	15 "	= 1·0	"
1/10 "	=0·0065	"	20 "	= 1·3	grammes
1/8 "	=0·008	"	24 "	= 1·5	"
1/6 "	=0·01	"	30 "	= 2·0	"
1/5 "	=0·013	"	40 "	= 2·6	"
1/4 "	=0·016	"	60 "	= 4·0	"
1/3 "	=0·02	"	90 "	= 6·0	"
1/2 "	=0·032	"	120 "	= 8·0	"
3/4 "	=0·05	"	½ oz. (av.)	= 15·0	"
1 "	=0·065	"	1 " "	= 30·0	"
1½ grains	=0·1	"	(*or nearer*	28·35)	"
2 "	=0·13	"	1 pound	= 453·59	"

WEIGHTS. METRIC TO IMPERIAL.

1 kilogramme	= 2 lb. 3¼ oz.
500 Gm.	= 1 ,, 1⅝ ,,
100 ,, ...	= 3½ oz.
25 ,, ...	= ⅞ ,,
10 ,, ...	= ⅓ ,,
1 ,, ...	= 15·43 grains.
½ ,, or 500 milligrammes	= 7·7 ,,

MEASURES. IMPERIAL TO METRIC.

½ minim	= 0·03	Cc.	40 minims	= 2·4	Cc.
1 "	= 0·06	"	50 "	= 3·0	"
2 minims	= 0·12	"	60 "	= 3·5	"
3 "	= 0·18	"	80 "	= 4·7	"
4 "	= 0·24	"	90 "	= 5·3	"
5 "	= 0·30	"	100 "	= 6·0	"
6 "	= 0·35	"	120 "	= 7·0	"
7 "	= 0·42	"	240 "	= 15·0	"
8 "	= 0·5	"	1 fluid ounce	= 30·0	"
9 "	= 0·54	"	2 fluid ounces	= 60·0	"
10 "	= 0·6	"	4 " "	=115·0	"
12 "	= 0·7	"	5 " "	=140·0	"
15 "	= 0·9	"	6 " "	=170·0	"
17 "	= 1·0	"	8 " "	=230·0	"
20 "	= 1·2	"	10 " "	=280·0	"
25 "	= 1·5	"	20 " "	=568·0	"
30 "	= 1·8	"	1 gallon	= 4·546	litre

MEASURES. METRIC TO IMPERIAL.

1 Cc....	= 17 minims
1 litre	= 1 pint 15 fl. oz. approx.

INTRODUCTION.

Herein medicines are viewed from a pharmaceutical and medical aspect; references to their use, with the doses employed, are given in *précis*. The area of selection is limited by personal experience. Modern official drugs are still noticed, and older ones are introduced when unofficial preparations of them are in use, or their preparations have undergone alteration. In the Secondary List of drugs will be found those to which medical attention has been more or less directed, but which have not come into general use. The Index forms a copious Posological Table. The doses are based on personal experience or are culled from the best authorities. The terms *Drachm* and *Ounce*, when applied to liquids, are understood to be the Fluid Drachm and Fluid Ounce respectively, as defined by the British Pharmacopœia. Except in some foreign formulæ where liquids are ordered to be weighed, when parts are referred to (solubilities included), it is to be understood that ounces and fluid ounces, grains and grain-measures, or grammes and cubic centimetres are to be employed. In regard to the formulæ for hypodermic injections and several others, as a minim is not equal to a grain-measure, and as hypodermic syringes and dispensing measures are graduated in minims, for practical purposes the use of 'parts' is generally avoided when referring to these small quantities. They are therefore ordered in grains and minims or ounces (*i.e.* fluid ounces); thus Injectio Morphinæ Acetatis Hypodermica contains 1 grain of Morphine Acetate in 6 minims. Exceptions to this rule are clearly indicated. Specific gravities and solubilities have been determined at 15·5° C. (60° F.).

Percentage solutions are sometimes mentioned, by which it is intended that 100 grain-measures of the finished solution shall contain *n* grains of the substance, or that 100 Cc. shall contain *n* Gm.; *e.g.* a 50 per cent. solution of Cocaine Hydrochloride will contain 50 grains in 100 grain-measures, and will dilute with an equal volume of liquid to form a 25 per cent. solution. For conversion table, *v.p.*641.

ABBREVIATIONS.

When the reference is to a periodical, the number put first is the number of the volume; then follow the last two figures of the year, and the last number refers to the page.

Am.M.S.B.—American Medico-Surgical Bulletin.

Arzn.—Arzneimittel die im Deutschen Arzneibuch nicht enthalten sind, 1897.

B. and C. D.—British and Colonial Druggist.

B.M.J.—British Medical Journal.

B.M.J.E.—British Medical Journal Epitome of Current Medical Literature.

B.P.C.—Formulary, 1901, of the British Pharmaceutical Conference.

Brompton H.—Pharm. Brompton Hospital, 1899.

Brunton.—Text-Book of Pharmacology, Therapeutics, and Materia Medica, by Sir T. Lauder Brunton, M.D.

B.S.H.—Pharmacopœia of the British Skin Hospital, 1884.

C.—Chattaway, Digest of Researches on Pharmacopœia Revision, 1903.

C.D.—Chemist and Druggist.

Abbreviations—*continued.*

C.L.T.E.—Central London Throat and Ear Hosp. Pharm. 1901
Chem. News.—Chemical News.
Codex.—Codex Medicamentarius, Pharmacopée Française, 1884.
C.U.D.—International Conference for the Unification of Pharmacopœial Formulæ of Potent Drugs and Preparations, Proposals adopted by. Brussels, 1902.
Ed. M.J.—Edinburgh Medical Journal.
F. Ital.—Farmacopea d'Italia, 1892.
G.—The Essentials of Materia Medica and Therapeutics, by Sir A. B. Garrod, M.D., and N. J. C. Tirard, M.D., 13th Ed. 1890.
G.H. - Pharmacopœia of Guy's Hospital, 1899.
G.N.C.—Pharm. Gt. Northern Central Hospital, 1899.
Gt. Orm. H.—Gt. Ormond St. Hosp. Children Pharm., 1900.
K.C.H.—King's College Hospital Pharmacopœia, 1901.
I.C. Add.—Indian and Colonial Addendum (1900) to the British Pharmacopœia, 1898.
L.—The Lancet.
L.H.—Pharmacopœia of the London Hospital, 1901.
L.L.—London Lock Hospital Pharmacopœia, 1896.
M.—Annual Report of E. Merck.
M.A —Medical Annual, 1901, 1902, 1903.
M.C.—Medical Chronicle, Manchester.
Mid. H.—Pharm. Middlesex Hospital, 1899.
M.P.C.—The Medical Press and Circular.
M.T.G.—The Medical Times and Gazette.
Off.—*Official*—in the British Pharmacopœia.
P. Austr.—Pharmacopœa Austriaca, vii., 1889.
P. Aus. Add.— ,, ,, ,, 1900 Additamenta.
P. Dan.—Pharmacopoea Danica, 1893.
P.G. iv.—Pharmacopœa Germanica, editio iv., 1900.
P. Helv.—Pharmacopoea Helvetica, Ed. III., 1893.
Ph.—Pharmacopedia. White and Humphrey, 1901.
P.J.—Pharmaceutical Journal.
P. Jap.—Pharmacopoea Japonica, editio altera, *i.e.* ii., 1891.
P.L.—Pharmacopœia Londinensis, 1851.
Pr.—The Practitioner.
R.—Handbook of Therapeutics, by Sydney Ringer, M.D., and Harrington Sainsbury, M.D., 13th edition.
R.O.H.—Pharmacopœia of the Royal London Ophthalmic Hospital, 1901.
St. Bart's. H.—Pharm. St. Bartholomew's Hospital, 1900.
St. George's H.—Pharm. St. George's Hospital, 1899.
St. J. H.—Pharm. St. John's Hospital for Skin Diseases, 1900.
St. Th. H.—Pharm. St. Thomas' Hosp., 1902.
T.H.—Pharmacopœia of the Hospital for Diseases of the Throat, 6th ed. 1901.
Th. Gaz.—Therapeutic Gazette, Philadelphia.
Therap.—The Therapist.
U.C.H.—Pharm. of the University College Hospital, 1904.
U.S.—Pharmacopœia of the United States.
Vic. Park.—Pharm. City of London Hosp. (Chest), 1900.
V.H.C.—Victoria Hosp. for Children, Pharm., 1904.
W.H.—Westminster Hospital Pharmacopœia, 1902.
Y.B.—The Year-Book of Treatment.
Y.B.P.—The Year-Book of Pharmacy, 1901, 1902, 1903.

SYNOPSIS OF THE INDIAN AND COLONIAL ADDENDUM (1900) TO THE BRITISH PHARMACOPŒIA 1898.

ABBREVIATIONS.—I., *India*; A.C., *African Colonies*; Au.C., *Australasian Colonies*; E.C., *Eastern Colonies*; M.C., *Mediterranean Colonies*; N.A.C., *North American Colonies*; W.I.C., *West Indian Colonies*; P.I., *Pharmacopœia of India*, 1868; E.P.I., *D Economic Products of India*, 1889-96; Pg.I., *Pharmacographia Indica*, 1890-93.

Drug or Preparation.	Dose.	Source and where official.	Description, part used, or menstruum and strength.	Properties and References.
Acaciæ Cortex, (BLACK WATTLE BARK from *A. decurrens*)	………………	*A. arabica* and *decurrens.* I., Au.C., E.C.	Dried bark kept for one year…	Astringent=Oak bark.—E.P.I. i. 21; Pg.I. i. 550, 556.
Decoctum	½ to 2 oz.		Water, 1 in 16	
Acalypha ………………	………………	*A. indica.* I., E.C.	Fresh or dried herb ……………	Expectorant, emetic=Senega or Broom.—P.I. 205; E.P.I. i. 62.
Ext. Liquidum	5 to 30 m.		Alcohol 90 %, 1=1	
Succus	1 to 4 dr.		Fresh juice, ¼th alcohol 90 %	
Adhatoda ………………	………………	*A. Vasica.* I., E.C.	Fresh or dried leaves …………	Expectorant and antispasmodic, contains Vasicine, a bactericide.—P.I. 162; E.P.I. i. 109; P.J. 1888, 841; Pg.I. iii. 291; L. ii./oo, 327.
Ext. Liquidum	20 to 60 m.		Dried leaves, alcohol 60%, 1=1	
Succus	1 to 4 dr.		Fresh juice	
Tinctura	30 to 60 m.		Dried leaves, perc. alc. 60 % 1 in 8	
Agropyrum, TRITICUM or COUCH GRASS	………………	*A. repens* (*Triticum repens*). Au.C., E.C., [N.A.C.	Dried rhizome…………………	Diuretic and aperient.—Pg.I. iii. 50. p. 510.
Decoctum	½ to 2 oz.		Water, 1 in 20	
Ext. Liquidum	1 to 2 dr.		Boiling water, ¼ alc. 90% 1=1	
Alstonia, (DITA BARK from *A. scholaris*)	………………	*A. scholaris* I., E.C., and *A. constricta.* Au.C.	Dried bark …………………	Tonic, in dysentery.—P.I. 137; E.P.I. i. 197; Pg.I. ii. 386. pp. 527, 528. Dose of Tr. A. Constricta is less, 5 to 20 m.—P.J. i./o1, 362.
Infusum	½ to 1 oz.		Boiling water, 30 minutes, 1 in 20	
Tinctura	½ to 1 dr.		Alcohol 60%, macerate 1 in 8	
Andrographis (CREYAT, KIRYAT)	………………	*A. paniculata.* I., E.C.	Dried plant …………………	Tonic=Chiretta.—P.I. 161, 459; E.P.I. i. 240; Pg.I. iii. 46. p. 532.
Infusum	½ to 1 oz.		Boiling water, 15 minutes, 1 in 20	
Liquor Concentratus	½ to 1 dr.		Alcohol 20 %, 1 in 2.	
Tinctura	½ to 1 dr.		Alcohol 60 %, percolate 1 in 10	

Liquor Concentratus	½ to 2 dr.	I., E.C.	Alcohol 20 %, 1 in 2	for snake bites.—P.I. 198, 461; E.P.I. i. 315; Pg.I. iii. 158.
Tinctura	½ to 1 dr.		Alcohol 70 %, percolate 1 in 5	
Arnicæ Flores	....	*A. montana.* N.A.C.	Dried flower heads	Acrid stimulant = Arnica rhizome.
Tinctura	½ to 1 dr.		Alcohol 45 %, percolate 1 in 10	
Aurantii Cortex Indicus		*Citrus Aurantium* I., E.C.	Fresh and dried peel of fruit...	Mild tonic, stomachic.—Pg.I. i. 269. p. 112.
Azadirachta Indica, NEEM, or MARGOSA BARK	....	*Melia Azadirachta.* I., E.C.	Dried bark of stem	Tonic, antiperiodic = Quassia.—P.I. 55, 443; E.P.I. v. 214; Pg.I. i. 322, 547.
Infusum	½ to 1 oz.		Cold water, 15 minutes, 1 in 100	
Tinctura	½ to 1 dr.		Alcohol 45 %, macerate 1 in 10	
Belæ Fructus, BAEL FRUIT	....	*Ægle marmelos.* I., E.C.	Fresh half-ripe fruit	Mild astringent.—P.I. 46; E.P.I., i. 120; Pg.I. i. 277, 547. Fresh fruit useful in dysentery.-L.i./o2,66.
Ext. Liquidum	1 to 2 dr.		Cold water, ¼th alc. 90 %, 1 = 1	
Berberis	....	*B. aristata.* I., E.C.	Dried stem	Tonic. Extract known as 'Rusot' in India. P.I. 12; E.P.I. i., 412; Pg.I. i. 64.
Liquor Concentratus	½ to 1 dr.		Alcohol 20 %, 1 in 2	
Tinctura	½ to 1 dr.		Alcohol 60 %, percolate 1 in 10	
Betel	....	*Piper betle.* I., E.C.	Dried leaves............	Stimulant, narcotic, masticatory.—P.I. 298; E.P.I. vi. pt. I, 254; Pg.I. iii. 183.
Buteæ Gummi, BUTEA GUM, BENGAL KINO.	....	*B. frondosa.* I., E.C.	Inspissated juice from stem ...	Astringent.—P.I. 73.
Buteæ Semina	....	*B. frondosa.*	Seeds	Contain Moodooga Oil. Anthelmintic like Santonin.—P.I. 79, 446; E.P.I. i. 550; Pg.I. i. 454.
Pulvis	10 to 20 gr.	I., E.C.	Dried kernels freed from testæ	
Calotropis .... MUDAR	3 to 10 gr. Emetic: 30 to 60 gr.	*C. procera* and *C. gigantea.* I., E.C.	Root Bark freed from outer layer	Tonic, emetic.—P.I. 141, 457; E.P.I. ii. 43; Pg.I. ii. 428. For dysentery.
Tinctura	½ to 1 dr.		Alcohol 60 %, percolate 1 in 10	
Cambogia Indica	½ to 2 gr.	*Garcinia morella.* I., E.C.	Gum-resin	Cathartic = Siam Gamboge.—P.I. 30 E.P.I. iii. 476; Pg.I. i. 168.
Catechu Nigrum .... BLACK CATECHU	5 to 15 gr.	*Acacia catechu.* I., E.C., N.A.C.	'Cutch.' Extract prepared from wood	Astringent = Pale Catechu, 'Gambier'—P.I. 62; E.P.I. i. 42; Pg. I. i. 552, 557.

Drug or Preparation.	Dose.	Source and where official.	Description, part used, or menstruum and strength.	Properties and References.
Cissampelos		*C. pareira.* I., E.C.	Dried root	Tonic, diuretic = Pareira root.—P.I. 7; E.P.I. ii. 328; Pg.I. i. 53.
Decoctum	½ to 2 oz.		Water 1 in 8	
Ext. Liquidum	½ to 2 dr.		Boiling water, percolate, concentrate, ¼th alcohol 90%, 1=1	
Coscinium		*C. fenestratum.* I., E.C.	Dried stem	Tonic = Calumba.—P.I. 10; E.P.I. ii., 578.
Infusum	½ to 1 oz.		Boiling water, 30 minutes, in 20	
Liquor Concentratus	½ to 1 dr.		Cold water and alc. 90%, 1 in 2	
Tinctura	½ to 1 dr.		Alcohol 60%, macerate 1 in 10	
Cucurbitæ Semina Præparatæ, MELON PUMPKIN SEEDS	3 to 4 oz. bruised with water or milk	*C. maxima.* M.C.	Fresh ripe seeds deprived of testa and tegmen	Anthelmintic.—P.I. 97; E.P.I. ii. 639.
Daturæ Folia		*D. fastuosa v. alba* and *D. metel.* I., E.C., W.I.C.	Dried leaves	Anodyne = Belladonna and Stramonium. —E.P.I. iii. 34, 40.
Daturæ Semina		*D. fastuosa var. alba.* I., E.C.	Seeds	Diuretic and narcotic = Stramonium seeds.—P.I. 175, 460; E.P.I. iii. 34; Pg. I. ii. 585.
Embelia	1 to 4 dr.	*E. ribes* and *E. robusta*, I., E.C.	Dried fruit	Anthelmintic, like Kousso or Male Fern. —E.P.I. iii., 242; P.J. 1887, 171; 1888, 601, 305; Pg.I. ii. 349.
Extractum Glycyrrhizæ Spirituosum	½ to 1 dr.	I., E.C.	Extract of Liquorice 2, Alcohol 90% 1, Water *q.s.* to 4	Keeps better than B.P.
Gossypii Radicis Cortex		*G. herbaceum.* I., E.C., N.A.C., W.I.C.	Dried root bark	Emmenagogue = Ergot.—Pg.I. i. 224.
Decoctum	½ to 2 oz.		Water, 1 in 5	p. 278.
Ext. Liquidum	½ to 1 dr.		Alcohol 90%, Glycerin ¼th, 1=1	
Grindelia		*G. squarrosa* and *G. robusta.* A.C., N.A.C.	Dried leaves and flowering tops.	Sedative and antispasmodic. p. 279.
Ext. Liquidum	10 to 20 m.		Alc. 90% 1, Water *q.s.* to 3, with Sodium Bicarb. 1=1	
Gummi Indicum (GHÁTI or GHATTI GUM)		*Anogeissus latifolia.* I., E.C.	Gummy exudation from wood	Demulcent 1=2 Gum Acacia.—E.P.I. i. 257; Pg.I. i. 553; ii. 12.
	ad lib.		1 to 3 of water	

Hirudo Australis		*H. quinquestriata.* A.C.	Five-striped or Australian leech	= European Leeches.
Hygrophila		*H. spinosa.* I., E.C.	Dried herb	Demulcent and diuretic.—P.I. 162; E.P.I. iii. 316; Pg.I. iii. 36.
Decoctum	½ to 2 oz.		Water, 1 in 10	
Ispaghula	50 to 150 gr.	*Plantago ovata.* I., E.C.	Seeds	Demulcent = Linseed or barley.— P.I. 182; Pg.I. iii. 126.
Decoctum	½ to 2 oz.		Water, 1 in 73	
Kaladana PHARBITIS NIL	30 to 50 gr.	*Ipomœa hederacea.* I., E.C.	Dried seeds	Purgative and Anthelmintic = Jalap.—P.I. 155, 459; P.I. iv. 486; Pg.I. ii. 530.
Pulvis Compositus	20 to 60 gr.		Kaladana 5, Acid Potassium Tartrate 9, Ginger 1	= Pulvis Jalapæ Compositus.
Tinctura	½ to 1 dr.		Alcohol 70%, percolate 1 in 5	
Kaladanæ Resina PHARBITISIN	2 to 8 gr.	*Ipomœa hederacea.* I., E.C.	Prepared as Resina Jalapæ, B.P.	Equivalent of Jalap Resin, insoluble in ether.
Kavæ Rhizoma		*Piper methysticum.* Au.C.	Decorticated and dried rhizome	Stimulant diuretic. p. 533.
Ext. Liquidum	30 to 60 m.		Semi-alcoholic, 1 to 1	
Kino Eucalypti BOTANY BAY KINO	5 to 20 gr.	*Eucalyptus var. sp.* Au.C.	Exudation from stem	Astringent = Kino. p. 249.
Mylabris		*M. phalerata.* I., A.C., E.C.	Dried beetle	Vesicant = Cantharidis, contains Cantharidin 1 to 1·2 %.—P.I. 277, 467; E.P.I., iv. 209. p. 148.
Acetum Mylabridis			Mylabris *vice* Cantharides in B.P. 1898, 1 in 10	= Acetum Cantharides.
Emplastrum Mylabridis			Mylabris *vice* Cantharides in B.P. in 1898, about 1 in 3	= Emplastrum Cantharidis.
Emplastrum Mylabridis Calefaciens			Mylabris *vice* Cantharides in B.P. 1898, about 1 in 25	= Emplastrum Calefaciens.
Liquor Epispasticus Mylabridis			Mylabris *vice* Cantharides in B.P. 1898, 1 in 2	= Liquor Epispasticus.
Unguentum Mylabridis			Mylabris *vice* Cantharides in B.P 1898, 1 in 10	= Unguentum Cantharidis.
Myrobalanum (BLACK OR) CHEBULIC MYROBALANS	½ to 1 dr.	*Terminalia chebula.* I., E.C.	Dried immature fruits	Purgative, astringent = Galls. P.I. 88; E.P.I. vi. pt. 4,33; Pg. I. ii. 1.

Drug or Preparation.	Dose.	Source and where official.	Description, part used, or menstruum and strength.	Properties and References.
Unguentum			Benzoated Lard, 1 to 4	= Gall Ointment. p. 241.
Unguentum cum Opio			Above with Opium 7·5 %	= Gall and Opium Ointment.
Oleum Ajowan .... PTYCHOTIS OIL	½ to 3 m.	*Carum copticum.* I., E.C.	Distilled from fruit	Aromatic, carminative, contains Thymol. —P.I. 99; Pg.I. ii. 116. p. 505.
Oleum Arachis .... EARTH-NUT, GROUND-NUT OR PEA-NUT OIL	....	*A. hypogæa.* I., A.C., Au. C., E.C.	Expressed from seeds	= Olive Oil —P.I. 74, 446; E.P.I. i. 286; Pg.I. i. 494.
Oleum Gaultheriæ ...... OIL OF WINTERGREEN	3 to 10 m.	*G. procumbens* (*leaves*) *or* *Betula lenta* (*bark*). N.A.C.	Distilled Oil..........................	Contains Methyl Salicylate, stimulant and diuretic. p. 33.
Oleum Graminis Citrati INDIAN OIL OF VERBENA OR LEMON GRASS	....	*Andropogon citratus.* I., E.C., W.I.C.	Distilled Oil from entire herb...	Carminative, with agreeable odour, contains Citral, Citronellal, &c.—P.I. 256; E.P.I. i. 243; Pg.I iii. 564.
Oleum Gynocardiæ ...... CHAULMOOGRA OIL	5 to 60 m.	*Taraktogenus kurzii.* I., E.C.	Expressed from seeds	Alterative and emetic; used for psoriasis eczema, and leprosy.—P.I., 26; E.P.I iv. 193; Pg.I. i. 142. p. 377.
Unguentum			Paraffin 4, Soft Paraffin 5, Oil 1	
Oleum Sesami .... SESAME OIL	....	*S. indicum.* I., A.C., E.C., N.A.C.	Expressed from seeds..............	Demulcent = Olive Oil.—P.I. 150; E.P.I. vi. pt. 2, 507; Pg.I. iii., 26. p. 127.
Oliveri Cortex OLIVER OR BLACK SASSAFRAS BARK	....	*Cinnamomum oliveri.* Au.C.	Dried bark	Aromatic, yields an oil resembling, Sassafras Oil.—P.J. II, 99, 165.
Tinctura	½ to 1 dr.		Alcohol 60 %, percolate 1 in 10	
Picrorhiza	10 to 50 gr.	*P. kurroa.* I., E.C.	Dried rhizome........................	Tonic, antiperiodic, aperient.—P.I. 160; E.P.I., vi. pt. I, 229; Pg.I. iii. 10.
Ext. Liquidum	20 to 60 m.		Alcohol 60 %, percolate 1 in 1	
Tinctura	½ to 1 dr.		Alcohol 45 %, macerate 1 in 8	
Podophylli Indici Rhizoma INDIAN PODOPHYLLUM RHIZOME	....	*P. emodi.* I., E.C.	Dried rhizome and roots	Cholagogue, cathartic.—P.I. 12; E.P.I. vi. pt. I, 301; Pg.I. i. 69. p. 426.
Resina P. Indici	¼ to 1 gr.		Indian Rhizome by B.P. process	Rich in Podophyllotoxin.
Tinctura P. Indici	5 to 15 m.		Alcohol 90 %, 1 gr. Resin in 30 m.	

Sappan………………	………………	*Cæsalpinia sappan.* I., E.C.	Heart wood ………………………	Astringent = Logwood.—P.I. 79; E.P.I. ii. 11; Pg.I. i., 500.
Decoctum	½ to 2 oz.		Water 1 in 20, with Cinnamon ·16	= Decoctum Hæmatoxyli.
Tinospora, (Gulancha)	………………	*T. cordifolia.* I., E.C.	Stem collected in hot season ..	Tonic, contains Berberine = Calumba.—P.I. 9, 435; E.P.I., vi. pt. 4, 64; Pg.I. i. 54.
Infusum	½ to 1 oz.		Cold water, 30 minutes 1 in 10	= Infusum Calumbæ.
Liquor Concentratus	⅓ to 1 dr.		Treated as Calumba 1 in 2 ……	= Liquor Calumbæ Concentratus.
Tinctura	⅓ to 1 dr.		Alcohol 60 %, macerate 1 in 5	= Tinctura Calumbæ.
Tinctura Jalapæ Composita	½ to 1 dr.	I., E.C., N.A.C.	Jalap 8, Scammony 2, Turpeth 1, Alcohol 60 %, percol. to 100	Purgative. p. 333.
Toddalia ………………	………………	*T. aculeata* I., E.C	Dried root bark ………………	Aromatic tonic = Cusparia.—P.I. 47, 442; E.P.I. vi. pt. 4, 67; Pg.I. i. 260.
Infusum	1 to 2 oz.		Boiling water, 15 minutes 1 in 10	= Infusum Cuspariæ.
Liquor Concentratus	½ to 1 dr.		Alcohol 20 %, percolate 1 in 2	
Turpethum …… ……	5 to 20 gr.	*Ipomœa turpethum.* I., E.C., N.A.C.	Dried root and stem …………	Purgative = Jalap.—P.I. 156; E.P.I. iv. 493; Pg.I. ii., 527.
Turpeth (or Turbith Root)				
Tylophoræ Folia ………	¼ to 2 gr. Emetic: 15 to 30 gr.	*T. asthmatica* I., E.C.	Dried leaves………………………	Expectorant, emetic = Ipecacuanha.—P.I. 142, 458; Pg.I. ii., 437.
Urginea ……………… Indian Squill	………………	*U. indica* and *Scilla indica,* I., E.C.	Younger bulbs, soon after flowering	Expectorant, stimulant, diuretic. = Squill.—P.I. 241; E.P.I. vi. pt. 4, 214; Pg.I. iii., 476.
Acetum	10 to 30 m.		Diluted Acetic Acid, macerate 1 in 8	= Acetum Scillæ.
Pil. Ipec. cum Urginea	4 to 8 gr.	Contains 5 % of opium.	Urginea, dried *vice* Squill in B.P. preparation	= Pilula Ipecacuanha cum Scilla.
Pil. Urgineæ Comp.	4 to 8 gr.		Urginea, dried *vice* Squill in B.P. preparation	= Pilula Ipecacuanhæ Composita.
Oxymel **Urgineæ**……	½ to 1 dr.		Urginea 5, Acetic Acid 5, Water 16, Honey q.s. ………	= Oxymel Scillæ.

Drug or Preparation.	Dose.	Source and where official.	Description, part used, or menstruum and strength.	Properties and References.
Syrupus	½ to 1 dr.		Vinegar of Urginea 1, Sugar 38	= Syrupus Scillæ.
Tinctura	5 to15 m.		Alcohol 60 %, macerate 1 in 5	= Tinctura Scillæ.
Valerianæ Indicæ Rhizoma	....	*V. wallichii.* I., E.C.	Dried rhizome and rootlets	Stimulant, antispasmodic = Valerian.—P.I.120; E.P.I. vi. pt. 4, 219; Pg. I. ii. 238.
Tinctura Ammoniata	½ to 1 dr.		As Tr. Valerianæ Ammon.	= B.P. Tinctura Valerianæ Ammoniata.
Viburnum, BLACK HAW	....	*V. prunifolium.*	Dried bark	Antispasmodic, diuretic, nervine tonic.
Ext. Liquidum	1 to 2 dr.	I., E.C., N.A.C.	Alcohol 70%, 1 = 1	For dysmenorrhœa and threatened abortion.

Further notes on these Indian drugs.—P.J. ii./oo, 660, 701; i/o3, 91.

ALTERNATIVE PREPARATIONS

Sanctioned by the Medical Council

FOR USE IN INDIA AND THE COLONIES.

Adeps Induratus.—In hot climates Lard may be employed deprived of a portion of its oil by pressure.

Aquæ Olei Anethi, Anisi, Carui, Cinnamomi, Fœniculi, Menthæ Piperitæ, Menthæ Viridis, Pimentæ.—Each of these waters may be made by triturating the corresponding Oil with twice its weight of Calcium Phosphate and 500 times its volume of Distilled Water, and filtering the mixture. In hot climates these may replace the B.P. *Aquæ.*

Emplastra.—In the Tropics more or less Hard Soap, Indurated Lard, or Yellow Bees-wax may be used in preparing the Plasters of the Pharmacopœia or Addendum where otherwise they would be too soft for convenient use; but the official proportion of the active ingredient must in all cases be maintained.

Extracta Liquida.—Any Liquid Extract liable to ferment in the Tropics, defined in the text of the Pharmacopœia or Addendum containing less than one-fourth of its weight of Alcohol (90 per cent.), may have this increased to one-fourth of the weight of the Extract.

Limonis Cortex Siccatus.—In the tropics dried Lemon Peel may replace fresh Lemon Peel.

Suppositoria.—More or less White Bees-wax may be used in place of an equivalent amount of Oil of Theobroma, when otherwise they would be too soft for convenient use in the Tropics.

Syrupus Rhœados.—The quantity of Alcohol may be increased or doubled, replacing an equivalent quantity of water.

Unguenta.—In the Tropics these may be made harder or softer according to the needs of the climate, but the official proportion of the active ingredient must in all cases be maintained.

ABRUS.

Jequirity Seeds. — *Syn.* PRAYER BEADS; JUMBLE BEADS; GUMCHI (*Hindi*); INDIAN LIQUORICE. These seeds, the produce of *Abrus precatorius*, of a scarlet colour, with a black patch round the hilum, hard and difficult to powder, are innocuous when eaten, but poisonous when placed in wounds or under the skin of animals. The so-called **Abrin** is a mixture of active principles.—B.M.J. ii./89,184; P.J. 1889,197.

The continued use of Abrin is found to establish tolerance to its toxicity.—B.M.J. ii./97,704.

Infusum Abri, R.O.H. — Jequirity seeds in powder 2, Water at 120° F., 25; decant when cold. Used to produce purulent ophthalmia for the cure of granular lids.

Jequiritol.—An active principle in a sterile solution containing 50 per cent. of Glycerin; is advocated to replace the infusion; it has a clarifying influence on corneal opacities. A **Jequiritol Serum** is also prepared on the lines of Behring's methods of serum production; this is used for checking, if necessary, the inflammation produced by the Jequiritol Solution. The Jequiritol treatment has been employed in parenchymatous affections of the cornea, interstitial keratitis, eczema, and pannus.—L. i./01,1836.

ACIDUM BENZOICUM (*Off.*).

Syn. BENZOYL HYDRATE.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

Soluble, if pure, 1 in 400 of water; very soluble in alcohol, fats, oils, alkaline solutions (forming benzoates), and in glycerin about 1 in 30. It is prepared either from Gum Benzoin, or from Toluol, the former being the more expensive variety. It may also be obtained by the hydrolysis of hippuric acid. Melts at 121·4° C. It prevents fats becoming rancid, as in *Adeps Benzoatus* (*Off.*),—prepared from Benzoin 3, Lard 100, heated for 2 hours on a water-bath, and strained. It is antiseptic and has been recommended as an antipyretic, and is given to relieve chronic cystitis. It possesses diuretic properties.

Benzoic Acid and the benzoates have been used as germicides, given in large doses, in the treatment of phthisis and various febrile diseases,—diphtheria, tonsillitis, and scarlet fever.

Four grains of Benzoic Acid with 1 grain of Canada balsam, or 1 minim of glycerin, make a good pill, but it is more frequently administered in solution, as a benzoate.

A one in 20 solution in alcohol relieves urticaria, and, diluted with water, may be used as an antiseptic lotion. Applied as a dry dust is irritating to the nostrils.

Detection of, in Foodstuffs. Extract with a mixture of ether and petroleum ether in equal parts; this evaporated will contain saccharin (taste), salicylic acid (by its colour with ferric chloride), and benzoic acid (recognised by odor, crystalline form, and conversion into anilin blue.)—Y.B.P., 02,39.

Tablets, Compound, v. *Index.*

Benzoin (*Off.*).—There are two varieties known as Siam and Sumatra, the former being by far the best.

Sphygmographic Varnish. A special preparation containing Benzoin, Balsam of Tolu and Alcohol; is used for pulse tracings.

Trochisci Acidi Benzoici (*Off.*).

Contain $\frac{1}{2}$ grain in each; those of T.H. have a red currant basis. Useful as a voice lozenge.

Ammonii Benzoas (*Off.*).

Dose.—5 to 15 grains (0·32 to 1 Gm.).

In colourless laminar crystals; soluble 1 in 6 of cold water, 1 in 30 of alcohol, and 1 in 8 of glycerin.

Sodii Benzoas (*Off.*).

Dose.—5 to 30 grains (0·32 to 2 Gm.)

In white granular crystals; soluble 1 in 2 of cold water (1 in 1·64.—P.J. i./02,552). Two varieties are in use commercially, one prepared from the acid obtained from Gum Benzoin and the other from the artificial acid—the cheaper of the two.

Tablets 2 grains each.

Effervescent Sodium Benzoate.

Dose.—1 drachm or more.

Contains 6 grains in 1 drachm.

Pyranum.—*Syn.* PYRENOL.

Dose.—8 to 30 grains (0·5 to 2 Gm.), thrice daily, increased if necessary.

Said to have the composition Benzoyl-thymol-sodium oxybenzoate.

A slightly aromatic, white hygroscopic crystalline powder. Soluble about 1 in 1½ of water and 1 in 8 of alcohol, 90 per cent. Antipyretic and antineuralgic in sciatica and acute rheumatism, *small doses, e.g.*, 8 to 12 grains, three times a day for a fortnight are said to improve chronic rheumatism. *Large doses, e.g.*, 30 grains, increased the diaphoresis in pleurisy, and decreased the serous effusion.—B.M.J.E. i./03,79.

Calcii Hippuras.

Dose.—5 to 20 grains (**0·32 to 1·3 Gm.**).

In shining white crystals, soluble 1 in 27 of water.

Sodii Hippuras.

Dose.—5 to 30 grains (**0·32 to 2 Gm.**).

Is met with in commerce as a readily soluble white amorphous powder. Both it and the benzoate are recommended in gout, gravel, and calculus, as solvents for urates.

Acidum Cinnamicum, Cinnamylic Acid.

In transparent micaceous crystals, very slightly soluble in water.

Sodium Cinnamate.—*Syn.* Hetol.

Dose.—3 to 5 grains (**0·2 to 0·32 Gm.**) *per os*, or hypodermically.

Solution 1 in 20 of distilled water or normal saline solution, sterilised, for intravenous injection, has been found to exercise a beneficial effect in the treatment of phthisis.—B.M.J.E. i./99,51; ii./00,16; i./01,3,67; i./01,83; B.M.J.E. ii./01,27; i./02,28; L. ii./02,66,67; Pr. lxx.574.

Value of oil and preparations of cinnamon as internal antiseptics injected for phthisis, and given internally for cystitis and influenza.—B.M.J. i./05,584,697,753.

Glass Tubes are prepared containing 1 Cc. each of 1 and 5 per cent. solution respectively for injection.

Glycerinum Sodii Cinnamatis.

Dose.—30 to 60 minims (**1·8 to 3·5 Cc.**) hypodermically.

A 10 per cent. solution in sterilised glycerin is employed for hypodermic injection in tuberculosis and cancer. In the preparation of this solution care must be taken not to heat above 180°C. (about 356°F.) to prevent the formation of acrolein, which would be irritating, this temperature effectually sterilises the solution. Has also been used in cancer.—L. ii./02,66; i./03,1442; ii./03,464; B.M.J. ii./03,1526.

Causes a general leucocytosis after intravenous injection.—Jour. Path. and Bact., Vol. viii.

Acidum Hydrocinnamicum. — *Syn.* BETA-PHENYL-PROPIONIC ACID.

Dose.—½ to 2 grains (0·032 to 0·13 Gm.). In white feathery crystals, practically insoluble in water, but soluble 1 in 1 of alcohol 90 per cent.; recommended for phthisis.

Heto-Kresol.—Cinnamyl-metakresol.

Is used in cases of tuberculous wounds and broken surfaces. It is a white crystalline powder insoluble in water or glycerin, but slightly soluble in alcohol, and very soluble in ether.

Liquor Cinnamylicus. HOFF. *v.p.* 95.

Strontium Cinnamate.

Dose.—2 to 5 grains (0.13 to 0.32 Gm.)

A white powder soluble about 1 in 250 of water and about 1 in 50 of a mixture of glycerin and water equal parts and about 1 in 100 of alcohol 90 per cent.

This has been used similarly to the Sodium Salt for hypodermic injection in phthisis.

ACIDUM BORICUM (*Off.*).

Syn. BORACIC ACID, HYDROGEN BORATE.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

In white, pearly, laminar crystals, unctuous to the touch, without odour, or in the form of an impalpable powder (that known as **Pulv. Acid. Boric. Subtilis** has been passed through a No. 170 sieve); has a bitterish, cooling, not acid taste. Obtained for medical purposes from borax by the action of sulphuric acid. Soluble 1 in about 25 of water, 1 in 3 of boiling water, 1 in 25 of 90% alcohol, 1 in 5 of glycerin at 32° F., 7 in 10 at 212° F., slightly soluble in volatile oils. May be made into pills with glycerin of tragacanth, or with a fifth of its weight of cream of tartar and water.

It is antiseptic and antiputrefactive but does not destroy all moulds. Equal parts of boric acid and borax form a compound equally antiseptic and more soluble. **Glacialine** is a boric compound used in food preservation.

Cachets of Boric Acid contain 10 grains (0·65 Gm.) each. These are employed to sterilise the urine before and after bladder operations, and have been given in typhoid.—B.M.J.E. i./93,7.

Poisonous effects of Boric Acid.—L. ii./01,1514; B.M.J.E., ii./01,91.

Long continued internal use of borates may give rise to skin rash and albuminuria. — B.M.J.E. i./95,4; L. ii./98,1406; i./99,23.

Its use and abuse as a milk preservative.—L. ii./99,1282.

Daily doses of 1 to 2 Gm. caused formation of gas in the stomach and intestines, colic, pain in the epigastrium and diarrhœa.—L. i./03,749.

As to the use of boric acid and borax as *preservatives* for milk, &c., it may be noted that borax hinders the coagulation of casein in the stomach, and causes diarrhœa except when given in very small quantities. If more than 0.5 Gm. be taken daily there is a fall in the albuminoid metabolism; if 3 Gm. be taken daily a definite fall in weight can be observed in a short time. Boric acid similarly was proved to have a decided tendency to reduce body weight.—B. & C.D., ii./03,98.

Its use as a food preservative should be protested against until we have evidence that a child under one year of age can take 10 grains of boric acid daily for months with impunity.—L. ii./03,170.

Glycerinum Acidi Borici (*Off.*)., **Glyceritum Boroglycerini, U.S.**

Heat Glycerin 9 (by weight) to not above 302° F., and add Boric Acid in fine powder 6. Continue heat with stirring until weight is reduced to 10, and add Glycerin (by weight) 10. Is the equivalent of **Boroglyceride,** which was a patented preparation. Is readily soluble in water and alcohol. It is recommended as an antiseptic and preservative of meat, fish, milk, and other food—1 in 40 of water is used. It has been been employed as a surgical dressing, for purulent ophthalmia and otorrhœa, and is given internally in aqueous solution, or in pills combined with althæa.

Pessus Boroglyceridi for vaginal use weigh 90 grains each, and contain 70 grains of Boroglyceride with gelatin 13 grains, and water *q. s.*

Acidum Boro-Salicylicum.

A white powder soluble about 1 in 120 of water and about 1 in 8½ of alcohol 90 per cent., has an action similar to Salicylic Acid. Is mostly employed as—

Sodium Boro-Salicylate.

Dose.—5 to 45 grains (0·32 to 3·0 Gm.).

Has been given in rheumatic affections.

Branalcane.

Under this name a rose-coloured compound of Boroglycerin, with a trace of Resorcin, is recommended as a pigment for diphtheria and throat, aural, nasal, and skin affections.

Lanolimentum Boroglycerini.

Boric Acid 2, Glycerin 10, Water 5. Heat to dissolve, and add Wool Fat 35, Olive Oil 13.

Listerine. *Dose.*—1 or 2 drachms (3·5 to 7 Cc.).

An American specialty, used as lotion or mouth wash, is said to contain approximately Boric Acid 25, Benzoic Acid 1, Thymol 1, Eucalyptol 1, Oil of Gaultheria 2, Oil of Peppermint ½, Tincture of Baptisia 15, Alcohol (90 per cent.) 325, Water to 1,000.

Lotio Acidi Borici.

Boric Acid 1; hot water 20. Dissolve. Allow to cool—a portion of the crystals will separate. The solution is one of the most useful soothing antiseptic lotions.

Cartons of Boric Acid Crystals are supplied for producing respectively 1 pint of 2 per cent. and saturated solution—sufficient for a day's use—the patient being directed to prepare a sterile solution, *e.g.*, for an eye lotion, freshly made with boiling water.

Pastillus Acidi Borici, T.H., *v.p.*275.

Useful in aphthous affections of the mouth and throat.

Pessus Acidi Borici.

Ten grains (0·65 Gm.) in each, with oil of theobroma.

Convenient to replace douches after delivery.—B.M.J. ii./91,577.

Pulvis Acidi Borici Compositus, G.H.

Boric Acid 1, Zinc Oxide 3, Starch 6. For external application. U.C.H. for insufflation has Boric Acid 24, Potassium Bromide 24, Iodoform 2, Starch 99, Morphine Acetate 1, in fine powder.

'Solubes' Boric Acid, 15 grains each. For dissolving in 2 ounces of water as an eye wash, or more for vaginal injection or lotion to exposed surfaces.

'Solubes' Boro-Saline contain—
Sodium Biborate 5 grains, Sodium Chloride 5 grains.

'Solubes' Borax Compound contain—
Sodium Biborate 5 grains, Sodium Chloride $2\frac{1}{2}$ grains, Phenol $\frac{1}{2}$ grain, Sodium Bicarbonate $2\frac{1}{2}$ grains.

'Solubes' Borax and Cocaine Co. contain—
Sodium Biborate 2 grains, Sodium Chloride 6 grains, Boric Acid 1 grain, Benzoic Acid $\frac{1}{4}$ grain, Menthol $\frac{1}{100}$ grain, Thymol $\frac{1}{100}$ grain, Cocaine Hydrochloride $\frac{1}{10}$ grain.

These are directed to be dissolved in 2 or 3 ounces of warm water, to be used as a nasal or throat spray or for snuffing up the nostrils.

Styles of Boric Acid for the lachrymal sac and duct are prepared two inches long.

Suppositorium Acidi Borici.
Three grains (0·2 Gm.) in each. Useful in pruritus.

Tablets, 5 grains (0·32 Gm.) **of Boric Acid**.
Dose.—1 to 3.

Unguentum Acidi Borici (*Off.*).
Boric Acid, in very fine powder, sifted 1, Paraffin Ointment, white, 9. Mix. (1 to 6 in B.P. 1885.)

Unguentum Acidi Borici (Martindale).

	No. 1.	No. 2.	No. 3.
Paraffin (135° or 140°)	5	5	5
Vaseline	5	10	15
Boric Acid, in fine powder	2	3	4

Melt the paraffin and vaseline together; sift the Boric Acid into the liquid, and stir constantly till cold. These three ointments contain the same quantity of Boric Acid, *i.e.*, 1 to 5 of basis; they are also made **half** and **quarter strength,** *i.e.*, 1 of the acid to 11 and 1 to 23 of basis respectively. The ointment of full strength is used where cavities exist; the others to superficial wounds which it is desired to heal rapidly.

Boric Acid ointment is applied to surface wounds, burns, eczema, chaps, and sores, as an antiseptic dressing and "healing ointment." On removal, it should leave the wound "clean"—it should adhere to the material on which it is spread, not so much to the sore. It is applied more like a plaster than an ointment. The No. 2 ointment, spread on lint or rag, is most suitable for general use, except in the summer, and in hot climates in which No. 1 should be ordered for smearing on to the skin. No. 3 being softer, is often preferable for this. It is very useful in pruritus ani et pudendi, and as a dressing for scalds and in the minor surgery on shipboard.

'**Collapsubes**' containing **Boric Acid Ointment** No. 3, are convenient for the nursery and domestic use.

'**Collapsubes**' of **Boric Cream** are also prepared for toilet use.

Boric Acid is used for the preservation of milk, but is undesirable (*v. p.* 5). Neither the powder nor the crystals irritate the skin, mucous membrane, wounds, ulcers, or granulating sores. The powder, when mixed with starch, forms a useful "dusting powder" for infants, &c. A little of the powder sprinkled in the socks or stockings prevents the odour of perspiring feet. The lotion and lint are useful in ulcers of the legs and elsewhere. A piece of protective oiled silk, sufficient to cover the sore exactly, is dipped in the boric lotion and first applied, and over this a piece of boric lint, also soaked in the lotion, large enough to extend an inch beyond the protective, is kept *in situ* with a bandage. Boric Acid and Borax with glycerin or honey form valuable applications for aphthæ and stomatitis. Glycerin of Boric Acid is useful for tender corns, and the powdered acid wards off fleas, flies, cockroaches, &c.

Unguentum Acidi Pheno-Borici.

Contains 2½ per cent. of Carbolic Acid added to either No. 1, No. 2, or No. 3 Boric Acid Ointment. In certain cases of broken skin surfaces this addition proves more healing.

Vaselinum Acidi Borici.—*Syn.* BORIC VASELINE.

Boric Acid in fine powder 1, White Vaseline 9.

'**Collapsubes**' of **Boric Vaseline** (*v. p.* 217) with catheter attachment for urethral use, or with suitable tubes for uterine or rectal treatment are supplied.

Liquor Magnesii Boratis.

Magnesium Carbonate 233, Boric Acid 1550, boiling water 7500. Contains Boric Acid about 1 in 6.

Has been used as a diphtheria Pigment.

Magnesii Boro-citras, Magnesium Borocitrate.

Dose.—15 to 30 grains (1 to 2 Gm.)

In white powder or colourless scales, soluble in water; used as an urinary antiseptic internally for stone, gout and rheumatism; and 1 with 2 of Sugar is prescribed as **Boracite**, or Compound Powder of Boro-citrate of Magnesium (*dose*, 60 grains *ter die*), to sterilise the urine 48 hours before operations.—L. i./98,1106; i./03,836.

Zymocide.

A liquid antiseptic and deodorizer—agreeable, non-irritating, and non-poisonous. Diluted 1 to 5 or 10 of water, is used as a vaginal douche, also as a tooth-wash and for toilet purposes generally. Said to contain Extracts of Golden Seal and Calendula, Zinc Sulphocarbolate, Boric Acid, Witch Hazel, Sodium Thymolate, Menthol, and the Oils of Wintergreen, and Eucalyptus.

ACIDUM CARBOLICUM.

Phenol (*Off.*). — *Syn.* PHENIC ACID, PHENYL HYDRATE, PHENYL ALCOHOL.

Dose.—1 to 3 grains (0·065 to 0·2 Gm.).

In colourless crystals liable to become pink; neutral to test paper; obtained commercially from coal tar. If, while liquefied, about 10 per cent. of water be added, it becomes hydrated and remains liquid, unless exposed to a low temperature. It dissolves freely in alcohol, ether, chloroform, glycerin, fixed and volatile oils, fats, melted resins,—in vaseline about 1 in 20, water at 56° F. 1 in 14, at 95° F. 1 in 12. With a less quantity of water it forms an oily mixture, not a perfect solution, unless heat be applied; at 155°F. Phenol and water mix and dissolve in all proportions. A pure Phenol is manufactured synthetically from benzene and from aniline oil.

Phenol is a powerful antiseptic, antiputrefactive, and disinfectant, and applied locally, it has an anæsthetic action, similar, but inferior, to that of cocaine.

Carbolic Acid and its homologues and liquid preparations containing more than three per cent. of these are poisons, and placed in Schedule A, Part 2, of the Pharmacy Act, 1868.

Antidotes.—It causes more deaths from poisoning than any other drug. Apomorphine is the most prompt and suitable emetic, and magnesium or sodium sulphate, white of egg, and large doses of any innocuous oil should be given. Calcium saccharate is also recommended. Caffeine is also an antidote.—B.M.J. ii./01, 713. Turpentine has been suggested.

Vinegar is an antidote to the caustic effects of carbolic acid, internally and on the skin.—L. i./96,255.

Pure alcohol said to effectually prevent escharotic action on the tissues.—L. i./00,481; P.J. ii./99,62.

As antidote, Camphorated Oil recommended; 100 grains administered, patient improved in an hour, and completely recovered in a short time.—C. & D. ii./99, 1054.

Methods of testing carbolic disinfectants.—L. i./00, 158; P.J. ii./98,325.

Determination of, in gauzes, wools, &c.—P.J. ii./01, 138.

A quantitative test for Phenol suggested for official requirements, *e.g.*, treatment with a known excess of bromine solution and titration of residual amount by decinormal thiosulphate.—B. & C.D. ii./98,651.

Commercial Varieties in general use.

Absolute Phenol, in 1 lb. bottles and 28 lb. tins. In the form of **detached crystals** melting at not lower than 40° C. (104° F.), the official not lower than 39° C. (102° F.), these are hygroscopic and have a sweet taste.

Soluble 1 in 14 of water, 1 in 0·33 glycerin, and 1 in 2 of olive oil.—P.J. ii./03,882.

A further variety is in crystalline masses, known as "Ice Crystals," melting at 39° to 40° C. (102° to 104° F.); this is also termed No. 1 Acid.

The detached crystals are best adapted for surgical and medical use. They have not the slightest disagreeable odour.

Tablets contain ¼ and ½ grain for internal administration.

'**Solubes,**' 5 and 20 grains, on dissolving, produce antiseptic lotions.

Acidum Carbolicum Liquefactum, LIQUEFIED PHENOL (*Off.*).

Dose.—1 to 3 minims (**0·06 to 0·18 Cc.**).

Ten parts of water by weight added to 100 of above (crystallises in winter; is better with 15 per cent. at least).—P.J. ii./oo,473. Has Sp. Gr. 1·064 to 1·069.

Sealed Tubes of Liquefied Phenol containing one ounce to make a pint of 1 in 20 solution, are convenient for carrying in the surgical bag.

No. 2 Carbolic Acid, *Liquid.*

For general disinfection in infectious diseases. 1 in 40 may be sprinkled about rooms.

No. 4 Carbolic Acid, *Liquid,* in 16 oz. bottles, or in bulk. Is pale straw coloured.

This contains about 10 per cent. of Phenol, and nearly 90 per cent. of Cresols, and is suitable for use as a household disinfectant for drains, sinks, water-closets, urinals, &c. A solution 1 in 40 of hot water may be used.

No. 5 Carbolic Acid, *Liquid,* in gallon jars or bulk. Dark coloured. Is adapted for stable use, dustbins, &c.

Acidum Cresylicum. Cresolum Crudum P.G. iv. *Syn.* CRESYL, PARACRESYLOL, CRESYL HYDRATE.

A mixture of ortho-, meta-, and paracresols, forming the principal constituent in the last two preparations. The commercial article is much less soluble in water than Phenol, and is recommended for vaporization in whooping-cough. Is used in the preparation of Liquor Cresoli Saponatus, *v.p.* 180.

Solutol is a specialty containing Cresol dissolved in Sodium Cresolate. It is a brown, oily liquid disinfectant of tarry odour, soluble in water.

Solveol.

Dose.—60 to 100 grains (**4 to 7 Gm.** daily.

A solution of Cresols in Sodium Cresotinate: a 0·5 per cent. solution, is used as a local antiseptic in ozœna, empyema and cystitis. Has been given internally in scrofulosis and tuberculosis.

Kresolum, Ortho-Kresolum. P.Aus. Add.

In colourless acicular crystalline masses becoming yellow or brown. By the addition of one-tenth of water it forms **Kresolum liquefactum**, and **Aqua kresolica**, P. Aus. Add., is formed by adding of the latter 22 to water *q.s.* to 1000.

Trikresol, a German specialty, is a purified mixture of the three cresols. It is a clear, colourless, oily liquid, soluble about 1 in 40 of water, and is said to have three times the germicidal power of Phenol. For surgical use, ½ to 1 per cent. solution recommended. As an eye-wash the strength may be 1 in 1000 or 2000.

Carbolic Acid, Camphorated.

Phenol 12, Camphor 4, Water 1.

Melt or rub together till liquefied. Remains liquid at low temperatures, but is not miscible with water.

Is recommended as an antiseptic, germicide, and local anæsthetic.

A useful wound dressing, and is injected to abort boils. Pr. xl.128. Also used as a pigment to the cervix uteri.

Carbolic Acid Lotion. *Syn.* PHENOL LOTION.

Liquefied Phenol 1, Water 19 or more.

Solutio Phenoli, or Aqua Phenolata, should contain 2 per cent. of Phenol.—C.U.D.

Carbolic Oil.

Phenol 1, Olive Oil 9 (more or less, if ordered).

A modification of this, known as **Lund's Oil,** is used for oiling catheters; it is—

Phenol 1, Castor Oil 4, Olive Oil 11.

As the olive oil crystallizes in winter, the following **Catheter Oil** answers better:—

Phenol 1, Castor Oil 7, Almond Oil 8. St. George's Hosp. employs **Oleum Lubricans**—Cocaine 25 grains, Oil of Eucalyptus 10 minims, Castor Oil ½ ounce, Olive Oil ½ ounce.

Catheter Paste.

Tragacanth 2·5, Glycerin 10, Aqueous Phenol Solution (3 per cent.) 90.—P.J. ii./99,529.

Surgical Lubricant for catheters, &c.

Starch 4, Glycerin 35, add Water 8½; heat to boiling, remove from flame and add Boric Acid in powder 2½, warm to dissolve and when nearly cold add Phenol 1. The Lubricant is supplied in 'Collapsubes' (*v.p.* 217). Contains nothing to attack the metal of instruments, has the advantage over oily compounds of not attacking rubber goods, and can be removed by water.

Carbolised Iodine Solution (COLOURLESS).

Solution of Iodine, (Lugol's) 2·5, Phenol 1, Boiling Water to 200.

As a pigment in diphtheria, or as a gargle or inhalation. Is useful as a nasal douche in ozœna, and for intra-uterine injection.

Collunarium Alkalinum Compositum, T.H.

Carbolic Acid 2 grains, Sodium Bicarbonate 5 grains, Borax 5 grains, Water to 1 ounce.

Collunarium Acidi Carbolici Compositum. —*Syn.* DOBELL'S COLLUNARIUM. C L.T.E.

Glycerin of Carbolic Acid 10 minims, Sodium Biborate and Bicarbonate, of each 6 grains, Water to one ounce.

Glycerinum Acidi Carbolici (*Off.*).

Phenol 1, Glycerin *q.s.* to 5.

Useful as a throat pigment and applied to wounds.

Pigmentum Antisepticum.

For hay fever, Glycerin of Carbolic Acid 1 ounce, Quinine Hydrochloride 30 grains, with $\frac{1}{2000}$ part Mercuric Chloride added, forms a useful pigment for the nasal passages.

Iodized Phenol; Pigmentum Iodi Carbolicum, G.H.

Iodine 1, Liquefied Phenol 4. Digest till dissolved.

For intra-uterine medication on cotton wool.

Useful also as an application for ringworm of the scalp

Pastillus Acidi Carbolici.

Contains ½ grain (0·032 Gm.) Phenol. Antiseptic and stimulant.

Perles and Capsules of Carbolic Acid.

Globules of carbolic oil, containing one grain (0·065 Gm.), and two grains (0·132 Gm.) of Phenol in each. *Dose.*—1 or 2.

Pilula Acidi Carbolici.

Phenol 2, Powdered Liquorice 1, Powdered Althæa 1. In grains for one pill, in grammes for 15 pills. Makes a good pill. *Dose.*—1.

Smelling Salts, Carbolised.

Phenol 24, Ammonium Carbonate 16, Strong Solution of Ammonia 44, Oil of Lavender 1½, Camphor 3, Pine Sawdust (sifted) *q.s.* For coryza, hay fever, influenza, &c.

'Anti-Catarrhal' Salts.

Phenol 1, Eucalyptus Oil 1, Pumilio Pine Oil ½, Strong Iodine Solution ½, Camphor 1, Ammoniated Alcohol 2, Pine Sawdust 2 or *q.s.*

Suppositorium Acidi Carbolici. (*Off.*)

Phenol 1, White Beeswax 2, Oil of Theobroma, melted, 12 or *q.s.* For suppositories of 15 grains or 1 gramme.

Trochisci Acidi Carbolici (*Off.*).

One grain (0·065 Gm.) in each with Tolu basis.

Unguentum Acidi Carbolici (*Off.*).

Phenol 1, Glycerin 3. Dissolve and add Paraffin Ointment, white, 21.

Vapor Acidi Carbolici.

20 drops of Liquefied Phenol in a pint of water at 140° F. As a spray, 3 drops to an ounce of water.

Is useful in pertussis.

Preservative Solution for Anatomical Subjects.

Phenol 1, Glycerin 4, Methylated Spirit 5. Used for injection into the aorta.

Pusol.—A special preparation said to contain carbolic acid and camphor. Used as a dusting powder, and as an ointment (1 in 8) for various skin affections.

As Carbolic Acid coagulates albumen, it is sometimes employed in the strong liquid form as a caustic. Anointing with oil any part accidentally touched with it will, to a certain extent, neutralise its caustic action. Camphorated Phenol is used with advantage in ulcer of the os and cervix uteri, in chronic inflammation of the uterus and cervix with excoriation, and in chronic uterine catarrh.—R. One in 80 or more of water as a vaginal injection, in leucorrhœa, uterine ulceration, and cancer, cleanses, heals, disinfects, and allays pain. Glycerin of Phenol is useful in ringworm; and an ointment, 10 to 30 grains of the acid to an ounce of lard or soft paraffin, or added to other ointments, is efficacious in various parasitic skin diseases. As an inhalation Phenol lessens and disinfects the over-abundant expectoration in bronchitis and gangrenous lung. The pastil, lozenge, or gargle 1 in 100 of water, is useful in sloughs of the mouth or throat.

Internally, in peppermint water, or better, the pilula acidi carbolici or perle or capsule is useful in flatulency with great distention, unaccompanied by pain; it has antipyretic properties; it is often combined with rhubarb and extract of nux vomica—a minute quantity of glycerin added will make these combine to form a pill.

Typhoid and diarrhœa, successful treatment of, by carbolic acid in pills, keratin-coated. Is prophylactic to scarlet fever and stamps out puerperal septicæmia.—B.M.J. ii./92,1424; i./93,347,500,637,1311; i./94, 909; L.ii./93,1305.

The use of Carbolic lotion keeps off flies and other insects.

A 2 per cent. solution in spirit as a pigment in diphtheria.—B.M.J.E. i./92,51.

Hæmorrhoids injected with Phenol and Glycerin, equal parts; successful.—P.J. 1895,959

Compresses soaked with 5 per cent. solution of Phenol may cause coma.—L.i./95,1362; M.C. Dec./97, 208. Even 1 in 40 has caused carboluria and death when applied to penis after circumcision.—W. W. W. Also after use as lotion on leg.—L. i./03,1099.

Several cases of tetanus recovered after subcutaneous injection of Phenol.—L.ii./95,169; i./97,168; B.M.J.E. i./96,72; Pr. lxii.309; B.M.J. i./01,1270.

Tetanus, excellent results from doses of 3 or 4 centigrammes in a 3 per cent. solution, up to 35 centigrammes a day : 34 cases, only one death.—B.M.J.E. i./99,15; i./00,32.

Plague patients in Hong Kong received 144 grs. per diem for days with evidently satisfactory results.—M.A. 1904,75; L. ii./03,753.

Small-pox pustules touched with liquid acid produce good results.—L. ii./03,1153.

As a pigment to limit spread of erysipelas.—B.M.J. i./01,1142.

Phenol is freely soluble in caustic alkaline solutions, and a French specialty, known as *Phenol Sodique*, is much used as an antiseptic solution by dentists. Its composition is about as follows:—

Liquor Sodii Carbolatis.

Phenol 8, Caustic Soda 4, Distilled Water 100.

Acidum Sulphocarbolicum.

Syn. PHENOL-SULPHONIC or SOZOLIC ACID.

Prepared by the action of strong sulphuric acid on phenol; crystallises with difficulty, dissolves readily in water, alcohol, and glycerin, and is a strong antiseptic and disinfectant.

In gingivitis and pyorrhœa a 3 per cent. **solution** useful, reduces swelling, arrests flow of pus, and the gums return to their natural shape.

A 33 per cent. **solution** has been sold as **Aseptol.**

Cupri Sulphocarbolas.—*Syn.* CUPRI-ASEPTOL.

In light green small crystals, soluble in water, useful as a hæmostatic.

Sodii Sulphocarbolas (*Off.*). SODIUM PHENOL-PARA-SULPHONATE. *Dose.*—5 to 15 grains. (**0·32 to 1 Gm.**).

In white rhombic crystals, somewhat like magnesium sulphate. Soluble 1 in 5 of water. Is very useful for flatulence, cholera, the dyspepsia of phthisis, and diphtheria.

Twenty grain doses alternately with 1 grain of quinine every 2 hours, found useful in chorea —P.J. i./oo,95.

Zinci Sulphocarbolas (*Off.*). ZINC PHENOL-PARA-SULPHONATE.

Crystals in rectangular colourless plates. Soluble 1 in 2 of water (1 in 2·7. P.J. i./o2,552). Useful in gonorrhœa and leucorrhœa; 2 or 3 grains in an ounce of water for injection.

'**Solubes,**' 2 and 10 grains (**0·13** and **0·65 Gm.**), produce 2 and 10 ounces or more respectively of lotions for external use or injection.

Phenolphthalein (*Off.*).—*Syn.* PURGEN; DIHYDROXYPHTHALOPHENON.

Dose.—½ to 4 grains (**0·032 to 0·26 Gm.**).

A crystalline substance produced by inter-action of Phenol and Phthalic Anhydride. Soluble 1 in 10 of alcohol 90, but only 1 in 600 of water.

Is useful where a prompt purgative is required, as in jaundice. In ordinary patients a dose of from ¾ to 3 grains is sufficient, but patients confined to bed require from 3 to 10 grains. It has no irritant action on the kidneys.

Tablets, ½, 2, and 4 gr. are made.

Under the fancy name of " Purgen " this compound is supplied as " Infants," " Adults' Purgen " and " Strong Purgen."—B.M.J. ii/o2,353,1224; P.J. ii/o2,563.

Tribromophenol.—*Syn.* BROMOL.

Dose.—½ to 2 grains (**0·032 to 0·13 Gm.**) in pill.

Obtained by the action of bromine on phenol in solution, and recrystallized from alcohol. In long silky needles, nearly insoluble in water, readily soluble in alcohol, ether, chloroform, and glycerin; also soluble in fats and oils; has an odour resembling bromine, and sweet astringent taste. Is a caustic and disinfectant. May be used alone, or in ointment (1 in 10), oily solution (1 in 30), or for diphtheria in glycerin solution (1 in 25). Is not dissolved by gastric juice, and is used as an intestinal disinfectant and in typhoid, also in minute doses for cholera infantum.—L. ii./91, 831.

Tribromophenol-Bismuth.—*Syn.* XEROFORM.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

A greenish-yellow neutral insoluble powder, with faint odour and taste, containing bismuth oxide and tribromophenol in nearly equal proportions. A powerful bactericide recommended specially for cholera.—L. ii./99,1459; B.M.J.E. ii./99,88; P.J. i./00,65.

Gallobromol, Dibromo-gallic Acid.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

In whitish minute crystals, soluble 1 in 10 of water, also in alcohol. Used internally in place of alkaline bromides as a nervous sedative, and as an antiseptic astringent injection in gonorrhœa, chordee, and cystitis, and as a lotion in eczema.

Phenosalyl.

A German specialty, said to consist of a solution of carbolic, salicylic, and lactic acids, with menthol and eucalyptol. Dissolves 1 in 25 of water, and is recommended, 1 per cent., as antiseptic lotion or ointment, mixed with an equal quantity of glycerin as a caustic; and internally, in dose of 1 or 2 minims, for flatulence.

Trichlorphenol.—*Syn.* TRICHLORPHENIC ACID.

A derivative of phenol, in white acicular crystals, with a disagreeable tarry odour, pungent taste, entirely volatilised by heat; very soluble in alcohol, ether, glycerin, fixed and volatile oils; insoluble in water. The salts of calcium and magnesium have been used medically; the solid substance is but little irritating to the tissues, and the solutions not at all.

Para-Monochlorphenol.

A powerful antiseptic used in treatment of lupus, phthisis, keratitis, iritis, and is also employed in dental work as an analgesic. A paste for subsequent filling is made with powdered Cobalt and Tropacocaine Hydrochloride, of each equal parts, with sufficient Para Monochlorphenol and Zinc Oxide to produce a soft paste. The unpleasant taste may be moderated by addition of Menthol.

This substance has also been used for laryngeal catarrh.—B.M.J.E. i./02,43.

ACIDA CHLORACETICA.

Chloracetic Acids.

Acidum Monochloraceticum.

A chlorine compound of acetic acid, in deliquescent white crystals, or more generally liquefied. It blisters the skin, and is used as a caustic for warts and corns, but the preparation more frequently used is

Acidum Dichloraceticum.

Used as a caustic to venereal sores.—P.J. ii./00,586.

Acidum Trichloraceticum, P.G.

In deliquescent crystals. This is a quick escharotic for venereal and other warts; it is also useful in throat affections. The application of a crystal produces a dry adhering eschar which is more quickly thrown off than that produced by chromic acid. There is said to be no secondary inflammation. For use as an astringent, 1 dissolved in 1 or 2 of glycerin with a little iodine and potassium iodide.

Recommended in chronic gonorrhœa, solution 1 in 4, applied on a tampon by means of an endoscope; less painful than silver nitrate. Also, diluted, for epistaxis.

Is a delicate test for albumin, *v. p.*596.

As an astringent lotion a 1 per cent. solution is employed.

A powerful stimulant for granulating surfaces. Has proved of value in treatment of chancroid ulcers.—P.J. ii./01, 365.

ACIDUM CHROMICUM.

Chromic Anhydride (*Off.*).—*Syn.* CHROMIC ACID.

In deliquescent, crimson, acicular or columnar crystals. It is odourless, and a powerful oxidising agent, decomposing alcohol, glycerin, &c., with evolution of heat. For use as a caustic, should be free from sulphuric acid, as then it does not spread over the surrounding tissue not requiring its action.

Is soluble 1 in 0·59 water at 61·5°F.—P.J. i./02,552.

Liquor Acidi Chromici (*Off.*).—1 to 3 of water.

A watery solution—1 in 4, or stronger—is applied with a pointed glass rod to warts on genitals, to condylomata and lupus; and 1 in 40 to ulcerated gums, and syphilitic affections of tongue, pharynx, and larynx.

For sweating feet; after washing, paint with a 5 to 10 per cent. solution.—Pr. xliii.299; B.M.J.ii./89,1256.

Successful use of chromic acid in cystic goître, ranula, and other cysts; a concentrated solution applied to the bounds of the cavity; also in epithelioma of tongue.

Of great value in syphilides of mucous membrane, lingua geographica, lingual psoriasis, nodules of the tongue, warts, &c. A concentrated solution (1 to 2) applied by means of a brush, and after a few minutes washed off with acetate of aluminium solution.—Pr. xlviii.126.

ACIDUM HYDROBROMICUM.

Acidum Hydrobromicum Concentratum.

A Hydrobromic Acid of Sp. Gr. 1·308, which is colourless or straw-coloured, is met with in commerce. One volume diluted with three of distilled water produces an acid of official strength and specific gravity. Should be kept from sunlight.

Acidum Hydrobromicum. **P.G.** iv. Has Sp. Gr. 1·208, and contains 25 per cent. of hydrogen bromide.

Acidum Hydrobromicum Dilutum (*Off.*).

Dose.—15 to 60 minims (0·9 to 3·5 Cc.); 60 minims = 10 grains of potassium bromide. Contains 10 per cent. of hydrogen bromide. May be prepared by the action of Phosphoric Acid on Potassium Bromide. Sulphuric Acid is unsuitable owing to secondary decomposition.

It is a colourless, very sour liquid, without odour. It is used to allay nervous excitability and exhaustion, as a solvent for quinine and preventing quinism, and as an alternative for potassium bromide; 8 minims will dissolve 5 grains of quinine sulphate in water.

It is used also to obviate the headache of cinchonism and the fulness of the head felt when taking iron; for anæmia; also to remove the ill effects of excess of tea or alcohol; and to calm excited heart.

It is useful for tinnitus aurium and tickling hacking cough at night, in doses of 10 minims or more, and in headache, with flushing in the face and ringing in the ears. It relieves toothache.

In epilepsy, the dose should be full, as much as half an ounce well diluted; 3 ounces daily given to robust patients.

For **sea-sickness**, an American specialty of some service contains in each dose of 2 drachms, about 40 minims of diluted hydrobromic acid and 30 grains of sodium bromide, taken every 3 hours, 24 hours before embarking, and occasionally afterwards.

ACIDUM HYDROFLUORICUM PURUM.

Fluoric Acid of commerce is redistilled for medicinal use. It contains about 30 per cent. of the gas, emits suffocating fumes, and requires to be kept in gutta percha or leaden bottles. Diluted 5 times has been used for inhalation in phthisis, and also in malaria, particularly where Quinine is objected to or is useless. May produce some sneezing and running at the eyes.

Acidum Hydrofluoricum Dilutum, B.P.C.

Dose.—5 to 20 minims (0·3 to 1·2 Cc.).

Contains 0·2 per cent. of hydrofluoric acid. Even thus diluted should not be kept in glass bottles for use.

Goître—of 20 cases treated in doses of 15 to 70 minims—17 recoveries and 3 failures.

Ammonii Fluoridum.

This salt has been suggested to diminish enlarged spleen in doses of 5 to 20 minims of solution, 4 grains in an ounce, after meals. For phthisis, inhalation from a 2 per 1,000 solution has been recommended. It is soluble 5 in 6 of water and about 1 in 250 of alcohol 90 per cent.

One of the authors (W.H.M.) took 4 grains experimentally. Almost immediately dizziness set in, then headache and feeling of nausea. This may be considered, therefore, a maximum dose.

The salt appears to be incompatible with Nitric Acid, Quinine Salts, Spirit of Nitrous Ether and soluble Calcium Salts, but compatible with Tinctura Ferri Perchloridi.

Antitussin.

A whooping-cough remedy. Is an ointment containing 5 per cent. Di-fluoro-di-phenyl, with soft Paraffin 10 and pure wool fat 85.—P.J. ii./00,775.

Fluor-rheumin.

Fluorin preparations, for rheumatism and influenza. Consists of Fluor-phenetol 1, Di-fluor-di-phenyl 1, soft Paraffin 10, Anhydrous Wool Fat 85. — P. J. ii./99,11.

Ferri Fluoridum. **Ferrous Fluoride.**

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.).

A purplish white insoluble powder, possessing hæmatinic properties, is valuable for enlarged spleen.

Quininæ Fluoridum.

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.)

Has been found successful in relieving enlarged spleen and in rickets.

ACIDUM LACTICUM. (*Off.*).

Dose.—5 to 20 minims (0·3 to 1·2 Cc.), well diluted.

A colourless, odourless, syrupy, sour liquid, obtained by the fermentation of milk sugar by the action of *Bacillus acidi lactici.* Lactic Acid has Sp. Gr. 1·21. It contains 75 per cent. of hydrogen lactate; is miscible with water, alcohol, and ether, and coagulates milk and albumen. It is employed topically to destroy morbid growths, in diphtheria, &c., and internally for infantile and tropical diarrhœa, for diabetes, dyspepsia, and as a stomachic tonic in combination with iron and lime.

Butyric Acid (with the characteristic evolution of hydrogen) may also be produced if the fermentation proceed too long, or if the Lactic Acid as it is produced be not neutralised by the presence of Calcium Carbonate or Zinc Oxide.

Acidum Lacticum Dilutum (B.P. 1885). Sp.Gr. 1·040. Lactic Acid 3 ounces, Distilled Water *q.s.* to 1 pint. *Dose.*—$\frac{1}{2}$ to 2 drachms (1·8 to 7 Cc.).

This diluted or *medicinal* Lactic Acid is too weak for making the preparations referred to in continental formulæ, and may have led to the discrepancies in the results obtained from Lactic Acid here, as compared with those recorded on the Continent in the treatment of diphtheria and diabetes.

For infantile diarrhœa with green stools. Pr. lxx.144.

Injectio Acidi Lactici C.L.T.E.

Lactic Acid 4 to 6 drachms water to 1 ounce. Is directed to be introduced by means of the submucous laryngeal syringe into the tissues of the larynx.

Nebula Acidi Lactici, T.H.

Lactic Acid 1, Distilled Water 15. Of great use in diphtheria; appears to have the effect of dissolving the membranous exudation.

Pigmentum Acidi Lactici, G.H.

Lactic Acid 1, Water 1.

Alopecia treated by a 30 per cent. lotion.—B.M.J.E. ii./01,92.

Calcii Lactas.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

An opaque, white, crystalline powder; unless freshly prepared not readily soluble in water.

Ferri Lactas, Ferrous Lactate. P.G.

Dose.—1 to 5 grains (0·65 to 0·32 Gm.).

In greenish-white crystals, soluble 1 in 60 of water; when taken internally is easily assimilated by the system

Syrupus Calcii Lactophosphatis (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Add gradually Precipitated Calcium Carbonate 25 to Lactic Acid 60, diluted with Distilled Water 240. When dissolved add Concentrated Phosphoric Acid 46, and triturate until the precipitate formed is redissolved. Dilute with a little Distilled Water, add Orange-flower Water 25, filter, and add Refined Sugar 700; dissolve without the aid of heat, strain, and add Distilled Water *q.s.* to 1,000.

An alternative method is to dissolve the Calcium Carbonate in the mixed acids diluted with 250 of water. —P.J. i./03,127.

Dusart's Syrup.

Dose.—½ to 1 drachm.

Calcium Carbonate 9, Lactic Acid 75 per cent. 22, Phosphoric Acid 10 per cent. 88, water *q.s.* Dissolve the Calcium Carbonate in the Lactic Acid diluted to 108 with water with the aid of heat. Cool, and add the Phosphoric Acid, and make up to 370. Dissolve in this Sugar 623, and add Spirit of Limes 7. Mix and adjust to 1,000. *All parts by weight.*—Y.B.P.02,232.

Syrupus Calcii et Ferri Lactophosphatum.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

May be made by dissolving a grain of ferrous lactate in each drachm of syrup of calcium lactophosphate.

In croup, lactic acid dissolves the fibrinous exudations; 15 to 20 minims in half an ounce of water used as spray with great success; also in diphtheria.

In phthisis, 10 minims twice a day, to allay cough and quench thirst, has been found useful.

In chronic catarrh of the bladder, lactic acid drinks arrest the ammoniacal decomposition of the urine, both inside as well as outside this organ, dissolve the salts and are said to stop the development of micro-organisms in it.

Pure acid as a paint, or in a paste with kaolin, or as a 50 per cent. injection, destroys lupus, but is painful.

Local use of lactic acid successful in tuberculous ulceration of pharynx and larynx.—L. ii./92,1162; Am.M.S.B. 1894,998.

Useful as a caustic to ulcers of cornea.—L. ii./94,152; i./95,1452.

ACIDUM NITRICUM (*Off.*).

Dose.—1 to 4 minims (0·06 to 0·24 Cc.).

Has Sp. Gr. 1·42, and contains 70 per cent. by weight of hydrogen nitrate.

Acidum Nitricum Dilutum (*Off.*).

Dose.—5 to 20 minims (0·3 to 1·2 Cc.).

Contains 17·4 per cent. of Hydrogen Nitrate (in 6 fluid drachms one molecular weight in grains). Is generally used medicinally.

It has been suggested that the acids and alkalis of the Pharmacopœia should be made of a volumetric strength, so that they would all be simple multiples of each other, and that they should be prepared on volumetric test solution principles.—P.J. ii./03,619.

Acidum Nitricum Fumans. Sp. Gr. 1·5. P.Jap. (P.G. 1·45 to 1·5).

A reddish-brown liquid, giving off yellowish-red fumes on exposure. Contains about 91 per cent. by weight of hydrogen nitrate. Is frequently used as a caustic.

Diphenylamine in 1 per cent. solution in sulphuric acid is a very delicate test for nitric acid, giving a blue ring on properly layering, *vide* also Water Analysis, *p.*610.

In the basic condition it is practically insoluble in water and soluble about 1 in 8 of alcohol, 90 per cent.

Acne pustulata should be stabbed with a pointed stick dipped in Nitric Acid.—B.M.J. i./01,513.

ACIDUM OSMICUM.

Syn. OSMIUM TETROXIDE, HYPEROSMIC ACID.

Dose.—$\frac{1}{64}$ grain (0·001 Gm.). Maximum daily dose $\frac{1}{10}$ grain (0·0065 Gm.).

Is in large yellow crystals, which soften like wax. Its vapour is intolerably pungent, attacks the eyes and nostrils strongly and painfully. Its taste is acrid and burning, but it is not acid to test or taste. Soluble slowly about 1 in 50 of water. It is poisonous and a powerful oxidizing body.

Potassium Osmate in 1 per cent. solution has been injected to relieve sciatica, and given internally for epilepsy.

Liquor Acidi Osmici, 1 per cent. (in water).

Dose.—2 to 10 minims (0·12 to 0·6 Cc.), hypodermically.

Is much used for hardening animal tissues preparatory to mounting as microscopic objects; fat and medullary matter are blackened by it. By becoming reduced into metallic osmium, it blackens nearly everything it comes in contact with, and requires to be stored in glass bottles free from lead.

Injected hypodermically, it has been used for neuralgia, for strumous glands, sarcoma, and cancer; also sciatica and muscular rheumatism.

Neuralgias of severe type and long standing cured.—B.M.J.E. ii./96,83; L. ii./99.1220.

Injected into goitrous swellings twice a week, gave permanent relief.—Pr. xxxiv.48.

Liquor Acidi Chromo-Aceto-Osmici (Flemming's).

Mix Glacial Acetic Acid 100 with Osmic Acid 8 in water 400, and Chromic Acid 15 in water 1500.

As an external application and injected into cancerous growths: this solution is also known as Flemming's strong solution for fixing, in histology.

8 Cc. of this solution are injected at edge of tumour, or 17 minims (1 Cc.), just beneath its surface.—M. 1902, 11. Microtomists' Vade Mecum, A. B. Lee. 1896.

ACIDUM PHOSPHORICUM CONCENTRATUM. (*Off.*).

Dose.—1 to 4 minims (0·06 to 0·24 Cc.).

This acid is produced by the oxidation of phosphorus either by the aid of the atmospheric oxygen or by heating with nitric acid.

Hydrated Phosphoric Acid, containing 66·3 per cent. of hydrogen orthophosphate, corresponding to 47·4 per cent. of phosphoric anhydride; Sp. Gr. 1·5. Commercially, it is also prepared, having Sp. Gr. 1·75, and containing 64·3 per cent. of the anhydride. If of this strength, it may be reduced to B.P. strength by adding to each 3 parts by weight 1 part of distilled water.

Acidum Phosphoricum Dilutum (*Off.*).

Dose.—5 to 20 minims (0·3 to 1·2 Cc.).

Contains 13·8 per cent. of hydrogen orthophosphate, or 10 per cent. of phosphoric anhydride. Sp. Gr. 1·08.

Concentrated Phosphoric Acid 3 ounces (fluid), Distilled Water *q.s.* to 20 ounces at about 60° F.

By weight, to 4½ ounces of the acid add $17\frac{1}{10}$ ounces of distilled water; or the same result may be obtained by diluting 4 parts, by weight, of acid Sp. Gr. 1·75 with 21 of distilled water.

It renders iron preparations compatible with astringent vegetable infusions.

Acidum Glycerophosphoricum (*Medicinal*).

Dose.—5 to 10 minims (0·3 to 0·6 Cc.).

Colourless, odourless liquid, Sp. Gr. 1·3 with sour taste, miscible with water and alcohol. This acid is prepared by heating Glycerin with two-thirds of its weight of Phosphoric Acid 60 per cent., until 190° C. is reached, and Acrolein fumes are given off. The liquid obtained, of brown colour, is neutralised with calcium carbonate. The resulting solution of Calcium Glycerophosphate is precipated by alcohol, collected and dried. This may be converted into the (purified) acid or other salts.

Calcii Glycerophosphas.

Dose.—3 to 10 grains (0·2 to 0·65 Gm.) in water or a weak wine.

The calcium salt of glycerophosphoric acid, which is formed, together with choline, on the breaking up of lecithin in the process of digestion. It is a white crystalline powder, easily soluble in cold, only slightly so in hot water, and is the most suitable salt for administration. It improves general nutrition of the nervous system, in all cases where nerve activity is enfeebled; may be given hypodermically, 2 to 4 grains daily in water. Is said to be very useful in doses of 4 to 8 grains *per os*, morning and evening, for incontinence of urine.—M. 01,56.

Ferri Glycerophosphas.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.). In whitish powder, or in scales, slightly soluble in water.

Pilula Ferri Glycerophosphatis (*Robin*).

Iron Glycerophosphate 0·05 to 0·1 Gm., Rhubarb 0·05 Gm., Extract of Cinchona 0·15 Gm. One pill with meals.—P.J. 1895, 1191. A **Wine** contains 1%, with Glycerin 5% in Sherry.

Lithii Glycerophosphas and
Magnesii Glycerophosphas.

Dose.—3 to 10 grains (0·2 to 0·65 Gm.)

Are white amorphous powders, freely soluble in water

Manganesii Glycerophosphas.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

A white amorphous powder soluble in water.

Potassii Glycerophosphas.

Dose.—3 to 8 grains (2 to 5·2 Gm.)

A yellowish syrupy liquid, sold in 50 and 75 per cent. solution and 100 per cent. (yellowish mass).

Quininæ Glycerophosphas.—*Syn.* KINEURINE.

Dose.—3 to 8 grains (0·2 to 0·52 Gm.).

A white powder, soluble in alcohol and, slightly, in hot water.

Kugloids are capsules containing Creosote and Eucalyptol, combined with Benzoic Acid and Quinine Glycerophosphate; are recommended for influenza, pharyngitis and bronchitis.

Sodii Glycerophosphas.

Dose.—5 to 10 grains (0·32 to 0·65 Gm.).

In the pure condition (100 per cent.) this compound is in pseudo-crystalline lumps. The 75 per cent. product is a translucent straw-coloured mass which cannot be poured without warming. A 50 per cent. dilution is therefore supplied for the sake of convenience. Useful in nervous affections.

Sanatogen is a food specialty said to contain this salt and casein. Has been given in mental disorders and for rickets in children.—P.J. i /01,755.

Strontii Glycerophosphas.

Dose.—3 to 8 grains (0·2 to 0·52 Gm.).

Elixir Glycerophosphatum.

Calcium Glycerophosphate 2, Sodium Glycerophosphate 2, Iron Glycerophosphate 1, Aromatic Syrup, B.P. 250. *Dose.*—1 to 4 drachms (3·5 to 15 Cc.).

Glycerinum Glycerophosphatum Compositum.—*Syn.* GLYCEROLE OF GLYCEROPHOSPHATES.

Dose.—1 to 2 fluid drachms.

Cudbear* ¼ ounce, Water 10 ounces. Boil 10 minutes, strain, and dissolve in the warm liquor—Calcium Glycerophosphate 160 grains, Potassium, Sodium, and Magnesium Glycerophosphates of each 80 grains, Iron Glycerophosphate 40 grains, Citric Acid 30 grains; add Tincture of Kola 10 drachms, Tincture of Ignatia Amara 1 ounce, and Glycerin *q.s.* to 1 pint. This is more palatable than if made with Strychnine and Caffeine, as in Syrupus Glycerophosph. Co. B.P.C. It keeps well and is particularly suitable for export, and for patients to whom it is undesirable to give sugar.

Granular Effervescent Glycerophosphates.

Dose.—60 grains (2·0 Gm.).

Contains in 1 drachm, Glycerophosphate of Calcium 3 grains, of Iron 1 grain, of Magnesium 3 grains, of Potassium 3 grains; with Caffeine Citrate 1 grain. A palatable mode of administration.

Compound Glycerophosphate Tablets are prepared containing in each the same quantities as the latter per drachm, and are convenient in being portable. To be crushed and drunk in a little warm water.

Syrupus Glycerophosphatum Compositus, B.P.C.

Dose.—1 to 2 fluid drachms.

Cudbear* ¼ ounce, Distilled Water 10 fluid ounces. Boil ten minutes, filter and dissolve in the warm filtrate—Calcium Glycerophosphate 160 grains, Potassium

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* A purplish red powder obtained by the ammoniacal fermentation of *Lecanora tartarea* and other lichens.

Glycerophosphate 80 grains, Sodium Glycerophosphate 80 grains, Magnesium Glycerophosphate 80 grains, Iron Glycerophosphate (in scales) 40 grains, Citric Acid 30 grains, Caffeine Citrate 80 grains, Strychnine Hydrochloride 2 grains. Then add Refined Sugar 14 ounces. Heat until dissolved, and strain. When cold, add (mixed) Chloroform 20 minims, Alcohol (90 per cent.) 40 minims, and Distilled Water *q.s.* to 1 pint.

Capsules are prepared equivalent to ½ and 1 drachm. of this syrup.

Syrupus Glycerophosphatum (*Robin*) is a special preparation.

Emulsio Olei Morrhuæ et Glycerophosphatum.

Dose.—2 to 8 drachms (7 to 30 Cc.).

Contains the Glycerophosphates of Calcium, Iron, Magnesium, Potassium, Sodium, combined with Cod Liver Oil Emulsion, containing 50 per cent. Cod Liver Oil. Is a useful nutrient combination.

Vinum Glycerophosphatum (*Labesse*).

Contains about 1 per cent. each of Calcium and Sodium Glycerophosphates in a bark and kola wine.

Dose.—½ to 2 ounces (15 to 60 Cc.).

Glycero-arsenates are analogous to the Glycerophosphates.

Calcium Glycero-arsenate. *Dose.* — ⅙ grain (0·01 Gm.) in pill.

In phthisis and skin affections.

ACIDUM PICRICUM.

Syn. CARBAZOTIC ACID; TRINITROPHENIC ACID.

Dose.—¼ to 2 grains (0·016 to 0·13 Gm.).

Is formed by dropping phenol into fuming nitric acid, heating the mixture, and purifying by re-crystallizing. It is in yellow, shining, laminar or acicular crystals, which give an intense deep yellow colour to water, in which it is soluble 1 in 95, and 1 in 16 of 90 per cent. alcohol. It is used for hardening tissues for microscopic examination, and as a urine test for albumin, *v.p.* 594. It is intensely bitter. Its salts of ammonium and potassium have been used medicinally, and have been thought to act like quinine; the potassium and ammonium salt decompose and explode if heated or percussed.

Liquor Acidi Picrici, 1 per cent. aqueous solution. This is the Lotio Acidi Picrici of St. Th. H.

Dose.—½ to 3 drachms (1·8 to 10·5 Cc.).

Diluted with an equal volume of water is used as a lotion for burns.

Successful use for erysipelas and inflammatory conditions of skin, as a pigment, 5 to 10 times a day.—B.M.J. i./89,678; L. i./89,702.

Jaundice and recovery after poisoning by picric acid. — B.M.J. i./96, 146.

Cotton wool impregnated with picric acid, saturated solution, as a cure for burns.—B.M.J. i./96, 176; ii./96, 651; B.M.J.E. i./98,88. Superficial burns treated by gauze dipped in saturated solution, wounds heal under the artificial scab produced.--B.M.J. i./99,1152. But may be attended with danger of toxic action.—L. ii./03, 580, 799, 925; i./04, 247. P.J. ii./02, 441. *Vide* Gauze, p. 630.

Notes on a few surgical uses of picric acid.—B.M.J. i./97,457.

Ointment, 1 to 3 per cent., recommended for pruritus of scrotum.—Pr. lix. 335.

As a lotion is of use for intertrigo, eczema, soft corns and to dress the sore of an in-grown toe nail.—B.M.J. i./03,422; B.M.J.E.ii./03 20.

In gonorrhœa, solutions and ointments ½ to 2 per cent. strength have been employed with good results.

'**Collapsubes**' of Picric Acid Ointment, ½ per cent., in soft paraffin basis, are supplied with catheter attachment for urethral medication.

Ammonium Picrate, given for ague and malarial fevers. Is an explosive compound. *Dose,* ⅛ to 1½ grains (0·008 to 0·1 Gm.) four or five times a day.

ACIDUM PYROGALLICUM.

Syn. PYROGALLOL, I.C. Add., P.G.

Dose.—½ to 1½ grains (0·032 to 0·1 Gm.) in aqueous solution, or in pills with syrup—these must be freshly prepared, and kept from the light. A specially pure acid designated "Resublimed Medicinal," is prepared for internal administration.

In very light small white crystals prepared from gallic or tannic acid by carefully heating. It is without odour, tastes insipid, producing a sensation of coolness on the tongue. Soluble in 2 parts of water, and in 10 parts of melted lard. It has great affinity for oxygen, and possesses antiseptic properties. It darkens the skin and hair, and is used in conjunction with a solution of silver nitrate for blackening the hair.

Unguentum Acidi Pyrogallici, B.S.H.

Syn. JARISCH'S OINTMENT. Pyrogallic Acid 60 grains, Lard 1 ounce. Mix. The acid will be in solution if the lard be melted. Used in cases of psoriasis. May also be prepared with soft paraffin of 2 and 5 per cent. strength.—St. Th. H.

Unguentum Pyrogallol Compositum (Unna). Pyrogallol 5, Salicylic Acid 2, Ichthyol 5, Soft Paraffin 88.

Pyrogallol is an internal astringent for hæmoptysis in doses of a grain every half hour. It has been prescribed with ergot for the same purpose and is stated not to cause vomiting nor to derange the stomach.

Therapeutic uses and toxic effects. A patient suffering from universal psoriasis was poisoned by pyrogallic ointment applied to one-half of his body, whilst to the other half chrysophanic acid ointment was applied for comparison.—M.R. 1880,49; Pr. xxv.135.

Proved useful in Hebra's wards in the treatment of psoriasis and other cutaneous affections. 10 per cent. ointment was brushed in twice a day and parts covered with flannel.

Unna suggested the internal use of diluted nitrohydrochloric acid to obviate the toxic effects.

Two cases of poisoning by large quantity internally—recovery in two days—no treatment beyond nitrohydrochloric acid and olive oil internally.—L. ii./92,308.

Acidum Pyrogallicum Oxidatum is prepared by the action of air and ammonia on Pyrogallic Acid; is used in 10 per cent. ointment for psoriasis, chronic eczema and erythematous lupus.—M.Index, 1902.

Eugallol, Pyrogallol-Monacetate, a yellowish syrupy liquid, is claimed to be more powerful than Pyrogallol; mixed with an equal quantity of acetone it may be applied with a brush for psoriasis. **Lenigallol,** Pyrogallol-Triacetate in white powder, is much weaker, may be used with zinc paste in acute and chronic eczema, while **Saligallol,** Pyrogallol-Salicylate, a resinous looking substance, is soluble in acetone and chloroform, which solutions may be applied for psoriasis when mixed with Eugallol. Its solution dries like a varnish on the skin.—P.J. ii./99,176; i./00,616.

Gallacetophenone.—*Syn.* PYROGALLOL ACETATE.

Occurs in yellowish-brown powder or in needles, freely soluble in alcohol, ether, glycerin, and hot water, very slightly in cold.

Is slowly oxidised and relatively non-poisonous. A 10 per cent. ointment does not stain linen, and is said to act quickly in psoriasis and other non-syphilitic skin affections.—P.J. 1891,346; M.C. April 1892,63.

ACIDUM SALICYLICUM (*Off.*).

Syn. ORTHO-OXY-BENZOIC ACID.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.) in cachets.

In colourless prismatic crystals, odourless, but its dust irritates the nostrils, taste sweetish. Melting point 156° to 157° C.; soluble 1 in 500 of cold water, 1 in 3 of 90% alcohol, 1 in 2 of ether, 1 in 120 of olive oil, 1 in 100 of castor oil, and 1 in 200 of glycerin; soluble also in melted fats and soft paraffin; 20 grains of salicylic acid are rendered soluble in an ounce of water by the addition of 25 grains of borax. Ammonium citrate and sodium phosphate also increase its solubility. An aqueous solution of the acid gives a deep violet colour with a trace of a persalt of iron.

Salicylic acid may be prepared from salicin, from oils of wintergreen or tea berry (*Gaultheria procumbens*), sweet birch (*Betula lenta*), *Andromeda Leschnaultii* (an Indian shrub), and other sources, but it is principally prepared by the action of carbonic anhydride on phenol. The last is known in commerce as *artificial* salicylic acid, in contradistinction to the *natural* acid, which is that obtained from the oils of the plants above-mentioned, known generically as oil of wintergreen, and consisting principally of methyl salicylate.

For internal use this natural acid and its salts, being free from cresotic acids, are preferred. An artificial "**Salicylic Acid, Physiologically Pure,**" in large prismatic crystals, melting at 156·8°C., is also free from these impurities; but all risk of danger may be avoided by the use ot the natural acid and its salts, which are still in general use.—B.M.J. ii./89,1315; i./00,364; L. i./00,937.

Salicylic acid prevents fermentative and putrefactive processes and is generally an antiseptic. It is largely used for surgical dressings, especially in cancerous affections. It has the advantage over carbolic acid that it has no smell and causes less local irritation, and the disadvantage that it is not volatile, and therefore does not affect the surrounding atmosphere sufficiently. It has been given for various febrile conditions, but particularly for acute rheumatism.

Internally, its effects closely resemble those of quinine, even to the production of ringing in the ears and transient deafness. Large doses alone act as a direct poison on the heart and respiration. It is only partly destroyed in its passage through the organism, and reappears in the urine as late as fifty hours after it has been taken, partly as such and partly as salicyluric acid. Its curative properties are hence due (1) to this resistance to decomposition; (2) to its harmlessness even in gramme doses; and probably (3) to the direct arrest of certain fermentative processes, which we must regard as the exciting cause of various diseases.

Salicylic acid may be given as cachets or made into pills with glycerin of tragacanth, but the dose required being large, and being so insoluble in water, it is not often given in the pure state; it is generally given as the salt, sodium salicylate. Salts of salicylic acid are not compatible with spirits of nitrous ether or quinine sulphate.

It is useful in small doses in the treatment of Menière's disease.

Dangers attending the use of salicylic acid in acute rheumatism.—L. i./80,327; i./90,1173,1299. Especially when used to combat hyperpyrexia.—B.M.J. ii./93,1129. Harmful when the disease affects heart and viscera.—B.M.J.E. ii./96,450.

The amount employed for preservation of foodstuffs and liquors is not injurious.—L. i./03, 717.

Ringworm, ointment useful containing salicylic and carbolic acids, of each ½ drachm in 1 ounce.—L. ii./92, 332.

The following **sterile solutions and suspension** of Salicylic Acid have been proposed for **Hypodermic use** at the seat of rheumatic pain:—

Salicylic Acid—1 in 100 of olive oil.
,, 20 grains, with borax 25 grains in water 1 ounce.
,, 10 grains suspended in 60 minims of vaseline oil (*cf.p.* 395.)

Amyl Salicylate.

Substitute for Methyl Salicylate, with much less odour. Non-toxic, and non-irritant when applied to the skin. Painted on to the affected joints.—P.J. i./01,138.

Capsules of Amyl Salicylate contain 3 grains (0·2 Gm.) for internal medication.

Oleum Gaultheriæ, I.C. Add., *v.p.*xxii.

Capsules of Oil of Gaultheria.—10 minims in each. *Dose.*—1 three times a day or oftener.

The oil has similar properties to salicylic acid. 10 to 20 minims are given every 3 or 4 hours in rheumatism and sciatica. With olive oil externally.—L. ii./90,444; Th. Gaz. 1891,429; Ed.M.J. 1891,268.

Death from poisoning by 1 ounce of this oil taken to procure abortion.—Pr. xl.371.

Oil of Wintergreen recommended as an external application for rheumatism.—L. i./97,1485; B.M.J.E. ii./97,79; and for chorea.—B.M.J.E. i./99,8.

Methyl Salicylas, Artificial (or Synthetic) Oil of Wintergreen, U.S.

A colourless liquid, with odour like above oil, is used for similar purposes. Spread on the skin and covered by impermeable tissue is quickly absorbed, and is said to be less irritating than the natural oil.—B.M.J. i./96,1118; L. i./96,941 L. ii./96,703; ii./97,52; B.M.J.E. ii./96,270.

As an antiseptic dressing in furunculous ulcers.—P.J. i./00,183.

Applied externally for acute and chronic rheumatism, is only slightly toxic.—B.M.J.E. i./98,103.

Recommended for orchitis and mumps.—B.M.J.E. i./99,63; P.J. ii./00,541.

External application for erysipelas.—B. & C.D. ii./02,243.

Methyl Salicylate Plasters are prepared of size 5 inches by 7 inches, and are useful in lumbago, sciatica, and rheumatism.

Mesotan, the methoxy-methylester of Salicylic Acid, is without the odour of Methyl Salicylate. Is used in solution in olive oil about 1 to 2 for inunction in rheumatism, angina, pleuritis and gout.—B.M.J.E. i./03,44; ii./03,80.

Ulmaren. Is of similar composition and use to the latter. It is insoluble in water, but miscible with alcohol, chloroform, ether and oils, and may be applied to the skin in the form of an ointment, with menthol and wool fat.

Gelatin Capsules of Ulmaren for internal administration contain 8 minims (0·5 Cc.).

Granular Effervescent Salicylic Acid contains 5 grains in 60 grains. *Dose.*—1 drachm (4 Gm.).

Liquor Acidi Salicylici.

Boiling distilled water 1000 parts, Salicylic Acid 1½ parts. Useful in preparing solutions of alkaloidal salts (*v.p.*203), and may be employed as a stable solvent for other salts prone to develop fungi in solution, but if used of this strength (nearly saturated) it proves very irritating for ophthalmic use.

Pulvis Salicylicus cum Talco, P.G.

Salicylic Acid 3, Wheaten Starch 10, Talc 87.

Mix to a fine powder. Is used to correct the fetid or excessive perspiration of the feet.

Salicylic Cream.

Salicylic Acid, in powder, 2, Carbolic Acid 1, Glycerin 10; mix. G.H. has Salicylic Acid 1, Glycerin 9.

Used as pigment when the skin is irritated by the discharge from wounds, &c., under antiseptic dressings.

Unguentum Acidi Salicylici (*Off.*).

Salicylic acid, in powder, 1, Paraffin Ointment, white, 49.

Useful in eczema, acne, ringworm and cancer of the breast.

Aseptic Wax. (Squire.)

Beeswax 87; Almond Oil 12; Salicylic Acid 1. Heat to 150°C. Keep in sterilised bottles containing sufficient Mercuric Chloride Solution (1 in 500) to cover the wax.

For arresting hæmorrhage from cranial bones.—B.M.J. i./92,1165.

Ammonii Salicylas. *Dose.*—5 to 30 grains (0·32 to 2 Gm.).

In hard colourless crystals, or minute crystalline powder, very soluble in water.

Effervescent Ammonium Salicylate.

Dose.—1 drachm or more.

Contains 10 grains in 1 drachm.

Calcii Salicylas.

Dose.—2 to 20 grains (0·13 to 1·3 Gm.). A white crystalline powder, odourless, with sweetish taste, slightly soluble in water, more so if containing dilute acids. Is useful, alone or with bismuth salicylate, in diarrhœa and gastro-enteritis.—P.J. 1891,427.

Ferri Salicylas. *Dose.*—3 to 10 grains (0·2 to 0·65 Gm.), in pills. A purplish brown powder, slightly soluble in water; given as an anti-arthritic tonic and for tonsillitis.

Found useful, on account of its antiseptic and astringent properties and its slight solubility as an application to foul wounds with a tendency to bleeding.—Edin. Med. Jour. 1877,707.

Potassii Salicylas. *Dose.*—5 to 30 grains (0·32 to 2 Gm.). A white crystalline powder, very soluble in water.

Sodii Salicylas (*Off.*).

Dose.—10 to 30 grains (0·65 to 2 Gm.) in water—the taste may be disguised by the addition of liquid extract of liquorice, syrup of ginger, or tincture of orange—or in cachets.

Tablets, 3 and 5 grains (0·2 and 0·32 Gm.).

In white scales or definite shining silky tabular crystals, soluble in its own weight of water, 1 in 0·83, P.J. i./02,552, soluble also in alcohol. It is supplied as "Natural" (from Oil of Wintergreen), "physiologically pure," and "commercial" (the latter frequently in form of powder). It possesses an unpleasant sweetish taste, but it is more pleasant to take and more rapidly absorbed than the free acid. N.B.—5 of salt = 4 of acid.

Sodium salicylate is not compatible with free ammonia, ammonium carbonate, or aromatic spirit of ammonia; if any of these be added to its aqueous solution, the mixture in a short time turns brown. Mineral and many organic acids cause separation of salicylic acid.

Its solution forms a useful antiseptic wash for the bladder.

Solubility in water of caffeine, theobromine, exalgin, phenol, menthol, creosote, guaiacol, and thymol is considerably increased by sodium salicylate.

Sodium salicylate 1, water 1, recommended as a clearing agent for vegetable sections. Alters cell membranes less than chloral, and mixes with oil of cloves.

Effervescent Sodium Salicylate. This is prepared in two strengths—5 and 10 grains in a drachm. *Dose.*—1 drachm (4 Gm.) or more.

'Vescettes' of Sodium Salicylate. Each contains 5 grains. To be crushed and drunk in a draught of warm water.

Injectio Sodii Salicylatis. *Dose.*—15 to 30 minims (0·9 to 1·8 Cc.).

1 in 20 of sterile water or weaker. Is injected at the seat of the pain in rheumatism. P.J. ii./02,73; *c.f.* p.33.

In acute tonsillitis, 10 grains every three hours relieve the distressing symptoms.—B.M.J. i./87,1253; Pr. xl. 260,351.

Large doses of the salicylates relieve neuralgia.—Pr. xxxix. 49. Useful in diarrhœa.—B.M.J. ii./88,521.

Sodium salicylate useful in vertigo with auditory nerve symptoms.—L. i./90,181. Also in chorea. Pr. xlv.297; L. ii./92,19,87.

Sodium salicylate of great use in influenza; the best diaphoretic.—L. i. /90,167,187,267; i./92,518.

Sodium salicylate of service in diabetes. Reduced quantity of urine and removed all but a trace of sugar. Pr. xlvii.91; B.M.J. i./01,760.

Sodium salicylate, 3 grs. three times a day, successful in Menière's disease.—B.M.J. ii./93,579.

Purpura and gangrene following use of three doses of 20 grains sodium salicylate.—L. ii./96,1478.

Is often depressing if made from Synthetic Acid, that from Oil of Wintergreen not so.—B.M.J. i./00,364.

Malaria well treated by sodium salicylate. L. ii./03, 95,200,631.

Sodii Di-thio-salicylas. *Syn.* DITHION.

Dose.—3 grains (0·2 Gm.) morning and evening, or repeated doses during an hour at night.

The sodium salt of an acid formed by the action of sulphur chloride on salicylic acid; is a greyish or yellowish-white powder, soluble 1 in 1 of water.

It promptly reduces temperature in articular and gonorrhœal rheumatism; acts more powerfully in small doses than salicylic acid, and is free from its objectionable sequelæ.—L. ii./89,347; P.J. 1889,1049; Y.B. 1890,312.

Foot and mouth disease treated successfully with dithio-salicylate of sodium; 1 to 2 oz. given internally daily, and a 2½ to 5 per cent. solution used to wash the mouths, hoofs, and udders, of the affected animals.—L. i./92,494.

Aspirin. *Syn.* **Salicyl-Acetic Acid.**

Dose.—10 to 15 grains in cachets or suspended in water.

A white microcrystalline powder, soluble about 1 in 100 of water. Has anti-rheumatic properties, and is used as a substitute for Salicylic Acid and its salts. Does not irritate the mucous membrane of the stomach, and is to be preferred in heart and ear complaints. Is quick in action in acute affections of the joints and in gout.—L. ii./99,219; B.M.J.E. ii./99,3,68; P.J. ii./99,135; P.J. ii./00,734,775.

Causes rapid defervescence in fevers.—B.M.J.E. ii./01, 56.

Has been known to produce temporary deafness after excessive administration.

Has analgesic action.—L. i./03, 984.

Checks chorea.—L. ii./03, 526.

In acute and chronic rheumatism and for pleurisy.—B.M.J.E. ii./99,96; L. ii./02, 51; L. ii./03, 1293; Pr. lxx.141.

Has been employed in diabetes, facial neuralgia, dysmenorrhœa, and in chorea.—M. 01,47; 02,29

Tablets are prepared weighing 5 grains (0·32 Gm.), and 8 grains (0·52 Gm.).

Dymal.

Is said to consist mainly of Didymium Salicylate. It is prepared from a substance which results as a by-product in the manufacture of incandescent mantles. In the form of a 10 per cent. wool fat ointment it is advocated for various skin affections, notably dry and weeping eczema.—**B.M.J.E.** i./01, 60.

Glycosal. **Mono-salicylic glycerin-ester.**

Dose—45 to 90 grains (**3·0 to 6·0 Gm.**) per diem.

A white crystalline powder only slightly soluble in water.

Is said to act as an antiseptic, preventing fermentation in the bladder.

Is recommended in cystitis. Resembles Salol and Salicylic Acid in anti-rheumatic effect, and is claimed not to disturb the digestive functions.

Externally in the form of ointment, is employed in chronic and squamous eczema.

Salacetol.

Dose.—10 to 30 grains (**0·65 to 2 Gm.**), in cachets or suspended.

Salicylic ester of acetone alcohol, an artificial glucoside of salicylic acid, in shining crystals, very slightly soluble in water. Caustic alkalis decompose it with formation of salicylates.

Taken internally it yields salicylic acid. Has been used successfully in choleraic diarrhœa and rheumatism as an intestinal antiseptic. For diarrhœa, it is recommended to be given suspended in castor oil, before breakfast.

As a local application is un-irritating and never poisonous.—B.M.J.E.i./96, 92; P.J.ii./96, 373.

Saloquinine.

Dose.—15 to 45 grains (**1 to 3 Gm.**) per diem as an analgesic: up to 90 grains (**6 Gm.**) per diem in malaria.

A quinine Salicylic Acid-ester: is a tasteless quinine substitute, insoluble in water, but soluble about 1 in 120 of alcohol 90 per cent. Said to be prompt in action in malaria, and as a prophylactic to tropical fevers. Has germicidal and antiseptic properties.—P.J. ii./01,452.

Saloquinine Salicylate. *Syn.* RHEUMATIN.

Dose.—15 grains (**1 Gm.**) repeated.

A white powder only slightly soluble in water. Is given in acute rheumatism.—P.J. ii./01,645; B.M.J.E. ii./03,68.

Salicinum, Salicin (*Off.*).

Dose.—5 to 20 grains (**0·32 to 1·3 Gm.**) in aqueous solution, taste may be covered with liquid extract of liquorice, or small dose in pill with glycerin of tragacanth.

A glucoside in colourless shining trimetric tabular crystals, without odour, taste moderately bitter. Soluble 1 in 28 parts of cold water, 1 in 50 of alcohol, but not soluble in ether. Obtained commercially from the Salix fragilis or S. purpurea and other species of willow bark. The peelings known as "rood schors" are worked up in Belgium and elsewhere. It is also produced from Salix alba, and from Populus tremula, the Aspen and other species of Populus. It is contained in the flower buds of Meadowsweet.

Useful in psoriasis, internally in 15-grain doses.

Salicin is used in small doses, often combined with valerianates and compound rhubarb pill, as a mild tonic.

Effervescent Salicin.

Dose.—1 drachm or more. Contains 5 grains in 1 drachm.

Tablets, 5 grains of Salicin (**0.32 Gm.**).

Dose.—1 to 4.

In large doses Salicin has a specific action over acute rheumatism. It is not so depressing in its action as salicylic acid. It is not adapted for use as an external antiseptic. Is used for ague.

Ten grains of salicin in draught with carbonate of ammonium checks pyrexia of phthisis.—B.M.J. i./91,684.

Salicin said to cure influenza more rapidly than any other mode of treatment, and also to act as a prophylactic and lessen infectiousness.—L. ii./91,121; i./92,327; P.J.1891,83; Pr.xlvii.298; Th. Gaz. 1892,4.

For malaria.—L. ii./03,200.

In lupus erythematosus with good results, 15 grains 3 times a day with a saline aperient.—Brit. Jl. Dermatalogy, July, 1903.

Salol. Phenyl Salicylate (*Off.*). **P.G.**

Dose.—5 to 15 grains (**0·32 to 1 Gm.**) in cachets or suspended in milk.

Tablets, 5 grains (**0·32 Gm.**). *Dose.*—1 to 3.

Capsules contain 5 and 10 grains (**0·3 and 0·6Gm.**).

Phenyl Ether of Salicylic Acid.—It is in small white crystals, with a slight aromatic wintergreen odour; is almost tasteless and insoluble in water, but soluble 1 in 10 of alcohol, 2 in 1 of ether, 1 in 12 of liquid paraffin, in fixed oils, and a trace in glycerin. It possesses antiseptic and antipyretic properties, and internally can be used advantageously in place of sodium salicylate, where this is badly tolerated. In the system it splits up into its component parts, both being found in the urine, which becomes very dark.

Salol is not easily suspended in water, but is best taken as Tablets, Capsules, Cachets or Emulsion.

Salol Mouth Wash.

A preparation similar to Odol; is produced by dissolving Salol 2·5, Saccharin 0·004, Peppermint Oil 0·5, in Alcohol 80 per cent., 97 by weight, and adding small flavourings of Clove and Caraway Oil.—Y.B.P. 1902,284.

Anise Mouth Wash.

Macerate 3 days Star Anise Fruits 15 in Alcohol 90 per cent. 200, filter and colour with Cochineal Tincture (is better than Alkannin) and add Peppermint Oil and Star Anise Oil, of each 60 drops. Pierre's Eau Dentifrice is similar. Eau de Botot is prepared with Cinchona, Cassia, Rhatany Cloves, &c.—Y.B.P. 1902, 282.—See also Lysoform Mouth Wash, p. 69.

Emulsio Salol. *Dose.*—½ to 1 ounce.

Salol 20 grains, Liquid Paraffin 1 drachm, heat to dissolve and while still hot add Gum Acacia in powder 30 grains; mix and add with vigorous trituration Distilled Water *q.s.* to 1 ounce.

Salol has been given with success for rheumatism, acute and chronic, for sciatica, dysentery, and typhoid fever. Relieves earache and ocular neuralgia, and of value for summer diarrhœa especially of children.

On account of slow excretion, should not be given in too large doses; death (4 days after) from 120 grains taken within 8 hours. Administration should be accompanied by sodium sulphate. Large proportion of phenol it contains renders it dangerous for unrestricted use. Contra-indicated in acute or chronic renal disease. Pr. xlv.12,99; M.C. Aug.93,342.

Renders urine aseptic, recommended for vesical catarrh, gonorrhœa, and operations on urinary organs. —L. i./90,644; Ed.M.J.1890,1080,387; Pr. xlviii.427.

Useful in pharyngitis and all forms of sore throat; relieves pain and difficulty of swallowing, and lowers temperature.—B.M.J. i./90,1040.

Salol the best intestinal antiseptic, little irritating; Bismuth Salicylate almost on same level; best form of administration;—Salol, Bismuth Salicylate, Sod. Bicarb. 5 grains each, in cachets.—Th. Gaz. 1891,653.

Salol may set up carboluria.—B.M.J. ii./03,1590.

In smallpox has a limited value.—B.M.J. ii./02,179.

Diabetes, well treated with doses of 15 grains four times daily for 5 days.—P.J. ii/01,393.

Salol Varnish for Pills.

To act in intestines only. Salol 4, Tannin 1, Ether 20. Varnish several times until layer is sufficiently thick.—P.J. 1891,348. Or better as follows:—

Salol 2, Shellac 3, Absolute Alcohol and Ether, of each 3; forms a pill coating insoluble in the acid gastric juice, but soluble in the alkaline fluid of the intestine; suitable for purgatives to act on the bowels, and for administering antiseptic remedies in cases of eczema and urticaria, in which it is thought these are caused by intoxication from ptomaines formed in the intestinal canal.

Collodium Salol, Salol Collodion. Salol 4, Ether 4, Collodion 30. Gives rapid relief in pain of acute rheumatism.—Th. Gaz. 1890,575; Pr. xlv.466.

Salol Catheter Oil. Salol 1, Castor Oil and Almond Oil, of each 15. Does not dissolve the varnish of catheters (G. Buckston Browne).

Salol cum Camphora, Salol Camphor.

Salol 3, Camphor 2, heated together combine to form a viscid liquid, which has been used as an antiseptic in place of iodoform.—P.J.1889,862,62. Salol Camphor, prepared with 10 per cent. only of camphor, quickly crystallizes, and when powdered is suitable for application, where liquid not available.—P.J. 1893,262.

Useful in suppuration of the middle ear; is neither painful nor irritating.—M.C. Nov.1890,158; Pr.xlvi.375.

Unguentum Salol cum Cocaina.

Salol 2, Cocaine Hydrochloride 1, Ceratum Petrolei 16. Useful for burns.

Agathin. SALICYL-α-METHYL-PHENYL-HYDRAZONE.

Dose.—4 to 8 grains (0·26 to 0·52 Gm.) in cachets.

Recommended as an anodyne in neuralgia, rheumatism, and sciatica, but is often unreliable in effect and slow in action.—B.M.J. i./93,702; ii./98,1054,1056.

Salophen. ACETYL-PARA-AMIDO-PHENYL-SALICYLIC-ESTER. *Dose.*—10 to 30 grains (0·65 to 2 Gm.) in cachets.

In light, white crystalline scales, tasteless and inodorous; soluble in alcohol, ether, and alkalis, almost insoluble in water. It contains 51 per cent. of salicylic acid, and was introduced to replace salol on account of the ill effects thought to result from the elimination of phenol from the latter. It is unaffected by gastric juice, but decomposed by pancreatic ferment. It has a slight antifebrile effect, and quickly removed pain and swelling in acute rheumatism, but does not protect against relapses.—L. i./92,116,547,766; P.J. 1892,612; B.M.J.E. i./92,24; ii./92,23; ii./93,27; B.M.J. ii./98,1056. Also in chorea.—P.J. i./96,176.

For neuralgia and pleurodynia.—B.M.J.E. i./93,99.

Used also in influenza, tonsillitis, cutaneous affections, and many other diseases.—Therap. 1899, 328.

A useful antipyretic and antineuralgic, especially for children.—B.M.J.E. i./95,16.

Often of use internally in pruritus.—B.M.J.E. i./97,44; P.J. i./97,426.

Salicylamide.

Dose.—2 to 6 grains (0·13 to 0·4 Gm.), in cachets.

The amide of salicylic acid, produced by action of concentrated ammonia on oil of gaultheria. In small white acicular crystals; soluble 1 in 250 of water, readily in alcohol, chloroform, and ether. Has no taste, is more soluble and more prompt than salicylic acid; acts in smaller doses, and has greater analgesic properties.—Th. Gaz. 1891, 686; P.J. 1891,346.

ACIDUM SULPHURICUM.

Sulphuric Acid (*Off.*).—*Syn.* OIL OF VITRIOL.

Dose.—1 to 2 minims (0·06 to 0·12 Cc.).

Has Sp. Gr. 1·843, and contains 98 per cent. by weight of hydrogen sulphate.

This acid may be considered the key which unlocks the treasures of chemical science, as it opens the way to the production of the other mineral acids, is used in the first ste of the Leblanc alkali process and the manufacture of bleaching powder, and through these, by endless ramifications, its action d influence are extended to all manufactured chemicals. 1900 contamination by arsenical impurity brought it to evil repute in the production both of food and drugs. rst, it caused Effervescent Sodium Phosphate to come under e ban of the Adulteration Acts, and then in 1902 the ational beverage Beer met with a similar fate. The acid, nless it be made from sulphur, arsenic-free as formerly, apt to contain arsenic at times in quantity as a dangerous ipurity, because it is now mostly made for commercial irposes from pyrites. If so, it is difficult to free it from all aces of arsenic by purification, and through the refinement chemical testing it is now hazardous to guarantee chemical bstances absolutely free from arsenic. The limit of ipurity is difficult to fix, as traces of arsenic are found even the materials of chemical apparatus and cooking utensils.

The report of the Royal Commission on arsenical isoning: see B.M.J. ii./03,1557,1610; L. ii./03,1674.

ulphuric Acid "Arsenic-free" is specially prepared to stand the Marsh-Berzelius Test 1 hour.

cidum Sulphuricum Aromaticum (*Off.*). *Syn.* ELIXIR OF VITRIOL. *Dose.*—5 to 20 minims (0·3 to 1·2 Cc.).

Sulphuric Acid 3, Alcohol (90 per cent.) 29½, Spirit Cinnamon ½, Tincture of Ginger 10.

This is a weak form of the old Mynsicht's Elixir itrioli—in this ethyl-sulphuric acid is formed on keep- g. The preparation would be improved by carefully eating the mixture of acid and alcohol to encourage the rmation of the vinous acid. Contains 13·8 per cent. of ydrogen sulphate, and has sp. gr. 0·922 to 0·926.

lixir Acidum. *Syn.* LIQUOR ACIDUS HALLERI, Ph.D.; F.Ital. *Dose.*—2 to 8 minims (0·12 to 0·48 Cc.).

Strong Sulphuric Acid and Alcohol, of each equal eights. Mix carefully and gradually.

Austrian P. has Liquor Acidus Halleri, P.G. Mixtura lphurica Acida, and P. Helv. Mixtura Sulphurico-acida au de Rabel) 1 to 3 of alcohol (weight); Codex, Acide lfurique Alcoolisé 100 to 300 (weight), and red poppy tals 4; and T.H. 1881, Acidum Sulphuricum lcoholisatum 15 to 105, and oil of sage 1. In all ese much of the sulphuric acid is in the form of ethyl- lphuric acid (sulphovinic acid), which is more agree- le in taste than diluted sulphuric acid. If mixed with veetened water, they form agreeable cooling drinks, eful in checking excessive perspiration.

Acidum Sulphuricum Dilutum. (*Off.*). Sp. Gr. 1·094.

Dose.– 5 to 20 minims (0·3 to 1·2 Cc.).

Contains 13·65 per cent. or in 6 fluid drachms half a molecular weight in grains of hydrogen sulphate.

Acidum Sulphuricum Fumans. *Syn.* NORDHAUSEN SULPHURIC ACID.

Sp. Gr. about 1·9. Contains some sulphuric anhydride dissolved in sulphuric acid. Gives off white acid fumes on exposure to the air, especially when warmed. Is used as a caustic in cases of cancer, preferably as

Michel's Paste. Asbestos, in fine powder, 1; Nordhausen Sulphuric Acid, 3. Should be made immediately before use.—L. ii./90,864.

Pasta Ricordi. Sulphuric acid, wood charcoal to make a paste.

Fröhde's Reagent for alkaloids consists of a fresh solution of Sodium Molybdate 1, in pure strong Sulphuric Acid, 1,000. This gives various colour reactions, or absence of colour with different alkaloids.

The **Molybdates** of Sodium and Ammonium are employed in chemical testing. They are probably tolerated in small quantities in the system. Chemically, Molybdenum resembles Lead and also Uranium.

ACIDUM SULPHUROSUM (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

A colourless liquid, having a pungent sulphurous odour, and containing 5 per cent. of sulphurous anhydride. Sp. Gr. 1·025. It is liable to oxidise into sulphuric acid if long kept, and when used for throat affections the presence of more than traces of sulphuric acid is objectionable. It may be freed from this by addition of barium sulphite as long as a precipitate is thrown down and decanted from sediment (barium sulphate).

The gas, liquefied by compression, is sold in hermetically sealed cans and in glass syphons for medicinal and disinfectant purposes.

Sulphurous acid is a strong reducing agent. For example, many colours are bleached by the sulphurous acid combining with the oxygen of any water present, hydrogen being liberated, which latter forms colourless compounds with the colours. These compounds may then be removed by washing. Sulphurous acid is used as an antiseptic and disinfectant. It destroys fungi and putrefaction-bacteria, thus preventing fermentation and decomposition.

It is used as a gas for disinfecting rooms in which patients suffering from infectious fevers have been nursed. It may be produced by igniting sulphur (1 pound to each 1,000 cubic feet), placed in a strong earthen vessel, which for safety should be supported over a bucket of water, on a pair of tongs laid across it. After the chimney and all crevices have been closed, and paper pasted over apertures in the windows, &c., the sulphur may be ignited by being moistened with methylated spirit and lighted with a match. The door should then be shut, pasted up with paper and left for six hours. Metals exposed in the room should be greased, and coloured materials as much as possible removed.

Sulphurous acid, the solution, is applied externally as a lotion—one part to two or more of water and sometimes a little glycerin added—for parasitic affections such as chloasma, ringworm, pruritus, and thrush, with very good results. Undiluted it is sprayed into the throat for tonsillitis and asthma, or used as an inhalation, a teaspoonful to a pint of cold water. Internally, for gastric fermentation accompanied by sarcinæ it is given with success in its combinations.

Recommended as a prophylactic to cholera, as workers in manufactures using it are not attacked; half-drachm doses frequently well diluted.—L. ii./93,289. And as a rectal injection, a 1 or 2 per cent. solution of the gas.—B.M.J. i./93,12.

Magnesii Sulphis.

Dose.—10 to 30 grains (0·65 to 2 Gm.).

Valuable in diphtheria. **Tablets** contain 5 grains.

Sodii Hyposulphis.—*Syn.* SODIUM THIOSULPHATE (*Off.*).

Dose.—10 to 60 grains (0·65 to 4 Gm.).

This is used as a lotion, 1 in 10 for chloasma, ringworm, &c. It may be made to evolve sulphurous acid as in the following lotion:—

Sodium Hyposulphite 6, Diluted Sulphuric Acid 1, Water 32.

ACIDUM TANNICUM (*Off.*).

Syn. TANNIN.

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

Tannic Acid is freely but slowly soluble in all propo tions in water and glycerin, less so in alcohol, and in eth in which, if both are pure, it is almost insoluble.

It is extracted from galls with ether containing small proportion of alcohol and water. The yield from 60 to 70 per cent.—Ph.

Tannin Solution precipitates the majority of alkaloi from solution, hence is occasionally employed as antidote to these.

Glycerinum Acidi Tannici, *v.p.*272.

Glycerinum Aluminis et Acidi Tanni *v.p.*273.

Rectal injection of tannin 30 grains in a quart of b water, with or without opium, recommended in chole —L. i./85,352; ii./92,683. Also in dysentery, combin with boric acid.—B.M.J.E. ii./90,1; ii./92,84.

Erysipelas,—Tannin 1, Camphor 1, Ether 8, paint on, useful.—B.M.J.E. ii./92,31.

Honthin. *Dose.*—3 to 15 grains (0·2 to 1 Gm.) to 150 grains a day.

A compound of Tannin and Albumen, keratinise is an intestinal astringent.—B.M.J.E. i./01,96.

Tannalbin.

Dose.—8 to 15 grains (0·52 to 1 Gr.).

A compound of tannin with albumen, in pale bro insoluble tasteless powder, containing about 50 cent. of tannin. An intestinal disinfectant soluble intestines but unaffected by stomach; recommended diarrhœa.—P.J. i./96,342; B.M.J.E. ii./96,8.

Tannigen. DI-ACETYL-TANNIN.

Dose.—3 to 8 grains (0·2 to 0·52 Gm.), in cach

A greyish white, tasteless, inodorous powder, insolu in water. Recommended in chronic diarrhœa. Is dissolved in the stomach, but only on reaching the testine.—P.J. 1894,252; i./97,58.

Tannigen and tannalbin appear in the urine as ga acid.—M.C. Mar. 97,448.

Tanocol. *Dose.*—15 grains (1 Gm.).

A compound of tannin and gelatine, Used as intestinal astringent.

Tannoform.

A compound of tannin with formic aldehyde in light pale reddish-white powder insoluble in water, soluble in alcohol and alkalis. Recommended as an unirritating antiseptic in ointment or dusting powder alone or with 1 to 4 parts of starch, for bedsores, hyperidrosis, pruritus, eczema (particularly in interdigital eczema), and piles. Useful in diarrhœa and enteritis, and for tender feet.— P.J. ii./96,394; B.M.J.E. ii./96,47. Checks the night sweats of phthisis if rubbed on the chest.—B.M.J.E. ii./01,59.

ACONITINA (*Off.*).

Syn. ACETYLBENZOYLACONINE.

Crystallised Aconitine.

Dose.—$\frac{1}{600}$ grain to $\frac{1}{250}$ grain (**0·00011 to 0·00025 Gm.**), and may be carefully increased if desired, the maximum single dose being 0·0003, the maximum daily dose 0·0006.—Van Renterghem in M.Index, 17,1902.

The B.P. gives no dose, presumably on account of the extreme toxicity of this alkaloid.

An alkaloid obtained from *Aconitum napellus* root and dried leaves,—content about 0·03 per cent. In colourless crystals, freely soluble in dilute acids, alcohol and chloroform, less readily soluble in ether, and almost nsoluble in water and petroleum ether; melts at 189° to 190° C.; yields acetic acid at a slightly higher temperature, and in weak acetic solution yields a red crystalline precipitate with potassium permanganate.

It is said to be present in the root in combination with Aconitic Acid.

A drop of a dilute solution placed on the tongue produces a characteristic tingling sensation.

For "Tuber" Aconiti that of the current year should be used as in B.P. Powdered drug to be used entire *i.e.*, without separation of residue).—C.U.D.

Aconine and benzoylaconine (picraconitine or soaconitine) have comparatively little action. Benzoylaconine is, to some extent, an antidote to the action of aconitine on the heart, but not on the respiration, whereas aconine possesses complete physiological antagonism to aconitine.—Proc. Royal Soc., lxii., 338; C. & D. i./98,313.

Pharmacology of the alkaloids of Aconite. Aconitine is about 200 times as toxic as benzoylaconine, and 2,000 imes that of aconine.—B.M.J. ii./98,1041.

Pyraconitine, consisting of aconitine minus one molecule of acetic acid, prepared by heating aconitine at its melting point, is almost non-toxic, but is more active than **benzoylaconine**, from which it differs by containing empirically one molecule less water. **Methylbenzoylaconine,** produced by heating aconitine with methyl alcohol, is feeble in toxicity in comparison with aconitine, but somewhat stronger than benzoylaconine —M. 1901.39; L. ii./01,777; B.M.J.E. ii./01,28; B.M.J. ii./02,1243.

One part of aconitine corresponds in action to 0·5 parts of Pseudaconitine and 0·8 parts of Japaconitine.

Pseudaconitine, a crystalline alkaloid obtained from Indian aconite, *A. ferox*, melts at 201° C., and has the constitution of acetyl-veratrylaconine.—P.J. ii./95,54.

Aconitine is a depressent, calmative, and diaphoretic. Externally the ointment of aconitine, and aconite liniment painted on either in a pure condition or mixed with belladonna or chloroform liniment, immediately relieve neuralgia, sciatica, and many forms of rheumatism. When effectual they cause a sensation of tingling, and subsequent numbness of the parts to which they are applied. Internally, tincture of aconite is given to control inflammation and to subdue the accompanying fevers with great success, especially if given in the early stage, of the disease, in acute sore throat, tonsillitis, catarrh, scarlatina, gonorrhœa, erysipelas, and other febrile affections, in doses of one minim every hour, it reduces pulse and temperature and causes free diaphoresis.

Aconite is useful in all forms of neuralgia, some diseases of the heart, rheumatism, and erysipelas.

Aconitine may be administered in the form of pill. It must be most carefully subdivided.

Aconitine, Amorphous.

Dose.—$\frac{1}{6}$ to $\frac{1}{4}$ grain (0·01 to 0·016 Gm.).

Is a mixture of several bases, principally aconitine and picraconitine. It is about 20 times less toxic than the crystallised base.—M. 01,40.

Aconitum Ferox, A. Heterophyllum and **A. Fischeri,** *v.p.*526.

The structure of various Aconite Roots.—P.J. ii./01, 576.

Assay of aconite herb, root and extract by various methods using iod-eosine as indicator; also method of examining this compound for analytical purposes.—P.J. i./03, 267.

Preparations.

Injectio Aconitinæ Hypodermica.

Aconitine (Crystals) 1 grain, Diluted Sulphuric Acid *q.s.*, Distilled Water to ½ ounce. Dilute one drop of the acid with about one drachm of water and carefully add drop by drop to the aconitine, avoiding excess, till it is dissolved, then make up the measure to half an ounce with water. *Dose.*—1 or 2 minims.

Aconitinæ Nitras.

Dose.—$\frac{1}{640}$ grain (0·0001 Gm.), hypodermically. A crystalline stable salt.

Oleatum Aconitinæ.

Aconitine 2, Oleic Acid 100. Dissolve; may be perfumed—is readily absorbed when painted on for neuralgic affections.

Pilula Aconitinæ.

Grain $\frac{1}{600}$ to $\frac{1}{250}$ (0·00011 to 0·00025 Gm.).

Tablets of Aconitine Nitrate, Hypodermic.

Grain $\frac{1}{640}$ to be dissolved in warm water.

Unguentum Aconitinæ (*Off.*).

Aconitine 1, Oleic Acid (by weight) 8, (1 grain=2 drops); heat gently to dissolve, and add Lard 41. Mix thoroughly. Should be freshly prepared. A piece the size of a bean is gently rubbed in for facial neuralgia, care being taken not to apply where the skin is broken, or to touch the mucous membranes.

Other Preparations of Aconite.

Chloroformum Aconiti, B.P.C.

Aconite Root, bruised	20 ounces.
Strong Solution of Ammonia ...	1½ ,,
Distilled Water	20 ,,
Chloroform	*q.s.*

Macerate the aconite with the ammonia and water, previously mixed, for 4 hours, dry and reduce to No. 40 powder. Macerate for 24 hours with 20 ounces of chloroform in a percolator provided with a tap, then percolate slowly, adding more chloroform until 30 ounces are obtained. Useful application for neuralgia; mixes with oils and liniments.

Emplastrum Aconiti et Belladonnæ is prepared in sheets and rolls as above.

Extractum Aconiti (B.P. 1885). *Dose.*—$\frac{1}{4}$ to 1 grain (0·016 to 0·065 Gm.) (from fresh leaves and flowering tops).

Extractum Aconiti Radicis Alcoholicum. **Alcoholic Extract of Aconite Root** (Fleming). *Dose.*—$\frac{1}{10}$ to $\frac{1}{3}$ grain (0·0065 to 0·02 Gm.).

Must be carefully distinguished from the preceding.

Linimentum Aconiti (*Off.*).

$1\frac{1}{2}=1$ of English root; useful in neuralgia.

Death following 2-drachm dose of linimentum aconiti in a drunken adult.—B.M.J. ii./86,680. Fatal case of poisoning by 9 minims of same = about $\frac{1}{30}$ grain aconitine.—B.M.J. ii./91,994; M.C. Feb. 1892,319.

Aconite poisoning successfully treated by digitalis, 25 minims tincture hypodermically in course of 4 hours.—B.M.J.E. ii./92,56.

Linimentum Aconiti Compositum, G.H. **A. B. C. Liniment.**

Aconite Liniment, Belladonna Liniment, Chloroform Liniment, equal parts.

Poisoning by A. B. C. Liniment.—B.M.J. i/96,399.

Pastillus Aconiti, *v.p.*275.

Pilula Aconiti. Root, in powder, $\frac{1}{8}$ grain in each. *Dose.*—1 hourly = about 2 minims of tincture.

Tinctura Aconiti (*Off.*).

1 of dried English root in 20 of 70 per cent. alcohol.

Dose.—5 to 15 minims (0·3 to 0·9 Cc.). As a febrifuge 2 minims every 10 minutes or quarter of an hour, for an hour, then repeat dose every hour till skin acts well and temperature is reduced.

To be prepared by B.P. process and to be standardised to 0·025 per cent. of total alkaloid by a method to be defined later by the C.U.D. This would not prove satisfactory.—B.M.J. i./03,29.

Tablets are prepared each equivalent to [illegible] **minims.** To be directed to be dissolved in a little water.

Fleming's and Turnbull's Tinctures of Aconite are about twelve times the strength of the above. They are sometimes ordered for external use, and were given in doses of 1 to 5 minims.

The U.S.P. tincture is about seven times stronger than that of the B.P., three and a half times stronger than the P.G., and nearly double the strength of the Codex Preparation.—P.J. ii./02,333.

ÆTHER (*Off.*).

Syn. ÆTHER SULPHURICUS; ETHYL OXIDE.

Dose.—40 to 60 minims (2·4 to 3·5 Cc.), or 10 to 30 minims (0·6 to 1·8 Cc.) repeated.

Is prepared by the interaction of Sulphuric Acid and Alcohol—Ethyl Hydrogen Sulphate being first formed which reacts with a further quantity of Alcohol iberating Æther and Sulphuric Acid again; in this manner the Acid will react with a very considerable quantity of Alcohol.

For general anæsthesia ether produces less depression on the heart than chloroform, but its use is unpleasant both to the patient and to the operators. Its suffocating action on the patient, if suffering from any lung or bronchial affection, is very irritating, and has proved atal. Care must be taken not to employ it near a light; ts vapour is heavier 2½ times than air and very inflammable, and as an anæsthetic it has to be used freely.

Revelations during anæsthesia.—L.ii./81,9.

Report on Ether drinking.—B.M.J. ii./90,885.

Death during ether anæsthesia; not from asphyxia.—L. i./00,45; Pr. liii.367; B.M.J. i./01,574.

Ether anæsthesia much safer than chloroform, as ½ to 1.—M.C. Dec.1892,150. Its comparative safety oubted.—L. i./02,1457.

Administration of nitrous oxide preceding ether recommended.—B.M.J.ii./92,938. Death under this treatment.—L.i./96,179; i./97,1039.

Pneumonia may follow its inhalation.—L. i./98,858.

Report on 15 deaths under ether anæsthesia during 897.—B.M.J. i./98,1358.

Ether recommended as a menstruum and vehicle for kin medication, on account of solvent action on sebaceous ecretion See Ethereal Tinctures of Belladonna (*p.*11

Capsicum (*p.*151), Iodine (*p.*322), and Menthol (*p.*349). L. i./90,1066; ii./90,67; i./93,997; P.J. 1890,84; Pr. xlv.218; Th. Gaz. 1890,554.

Glass Capsules contain half a drachm in each for hypodermic injection—are convenient to carry in the emergency bag. These are made with 0·735 ether—ethers with lower boiling points are unsuited.

Hypodermically 20 to 60 minims have proved a successful restorative in typhoid fever.

Commercial Varieties in General Use.

(1) *From pure Alcohol.*

Æther (*Off.*) Sp. Gr. 0·735.

This, the ordinary medicinal ether, contains not less than 92 per cent., by volume, of ethyl oxide, the remainder is alcohol and water. Boiling point not higher than 105°F. (40·5°C.). It is sometimes inhaled for producing general anæsthesia, but is not so suitable or this purpose as

Æther Purificatus, Purified **Ether** (*Off.*). Sp. Gr. not exceeding 0·722 and not below 0·720.

Should assume no blue colour on standing, when mixed with half its volume of solution of potassium bichromate acidulated with sulphuric acid, showing absence of hydrogen peroxide; nor should it be coloured by potassium hydroxide, showing absence of aldehyde. On evaporation leaves no residue or abnormal odour.

Æther pro narcosi, P.G.iv., Sp. Gr. 0·720.

Must be kept from light, in full bottles, and stand more rigid tests than **Æther P.G.**

(2) *From Methylated Alcohol.*

Absolute Ether, Methylated, Sp. Gr. 0·717 to 0.719.

Contains a little methylic ether, and is specially adapted for spraying to produce local anæsthesia, as it boils under 80° F., and is free from water. It is not adapted for producing general anæsthesia.

Rectified Ether, from Methylated Alcohol, Sp. Gr. 0·720. FOR GENERAL ANÆSTHESIA.

Methylated ether, well washed to free it from methylic ether, purified and re-distilled. It is well adapted for producing general anæsthesia, if standing the tests given for purified ether.

Methylated Ether, Sp. Gr. 0·730.

Is adapted for common purposes, ice machines, &c. Not fit for medical use. For photography a purer preparation, Sp. Gr. 0·725, is used.

Preparations.

Perles of Ether, 3 minims in each. *Dose.*—1 to 4.

Perles of Ether and Turpentine. *Dose.*—1 to 4

Useful to relieve pain of gallstones.

Spiritus Ætheris (*Off.*).

Ether, Sp. Gr. 0·735, 1, Alcohol (90 per cent.) 2.

Dose.—60 to 90 minims (3·5 to 5·3 Cc.), or 20 to 40 minims (1·2 to 2·4 Cc.) repeated.

The older formula is often ordered, viz.:—

Spiritus Ætheris Compositus (*Off.*).

Mix gradually Sulphuric Acid 36 with Alcohol (90 per cent.) 40; after 24 hours distil until the liquid in the retort reaches a temperature of 341° F. Pour the distillate into a separator, and, having removed the lower layer, add to the remaining upper layer Distilled Water 1½, and Sodium Bicarbonate *q.s.* to nearly neutralize. Separate the ethereal liquid (Oil of Wine), add it to Ether 5½ and Alcohol (90 per cent.) 38, and filter.

Dose.—60 to 90 minims (3·5 to 5·3 Cc.), or 20 to 40 minims (1·2 to 2·4 Cc.) repeated.

Syn.—Hoffmann's Anodyne, but the simple Spirit of Ether is now called Hoffmann's Anodyne in Continental Pharmacopœias.

Mistura Ætheris Cum Ammonia.

Spirit of Ether 3, Aromatic Spirit of Ammonia 3 water to 48. A rapid stimulant.

Gt. Orm. H. has Spirit of Ether 3½ minims, Aromatic Spirit of Ammonia 3½ minims, Tincture of Orange Peel 2 minims, Camphor Water to 1 drachm, for a child one year old.

Mistura Ammoniæ cum Æthere, U.C.H. has Aromatic Spirit of Ammonia 15, Spirit of Ether 15, Camphor Water to 480. The dose of either of these preparations is one ounce.

Spiritus Ætheris Nitrosi (*Off.*).

Dose.—60 to 90 minims (3·5 to 5·3Cc.), or 20 to 40 minims (1·2 to 2·4 Cc.) repeated.

An alcoholic solution of ethereal compounds containing: ethyl nitrite (not less than 1·75 per cent.), aldehyde, and other substances, probably including paraldehyde.

5 Cc. of this solution treated with 5 Cc. of Potassium Iodide Solution (*Off.*), and 5 Cc. of dilute Sulphuric Acid yield at least 31¼, but not more than 35 Cc. of Nitric Oxide, corresponding to at least 2½ per cent. by weight of Ethyl Nitrite, Iodine being liberated. Potassium Iodide should, therefore, obviously not be prescribed with Spiritus Ætheris Nitrosi. Furthermore, green Iso-nitroso-antipyrine is formed with Antipyrine, and the Spiritus Ætheris Nitrosi is also incompatible with Salicylates and Ferrous Sulphate.

Ammonium Acetate or Citrate hinders the deterioration of Spirit of Nitrous Ether.—D. J. Leech.

Liquor Ethyl Nitritis, Solution of Ethyl Nitrite (*Off.*). *Dose.*—20 to 60 minims (1·2 to 3·5 Cc.). Should be directed to be added to a small quantity of water at the time of taking the dose.

A mixture of Absolute Alcohol 95 and Glycerin 5, containing in 100 parts by volume, 3 parts, or not less than 2½ parts by weight of Ethyl Nitrite (obtained by the interaction of alcohol, sodium nitrite, and diluted sulphuric acid, at a low temperature). Should be stored in small bottles.

The circulation is distinctly affected by a fraction of a minim, yet large quantities do not cause death, *vide* also Nitroglycerin (*p.*365), and Sodium Nitrite—Leech.

Æther Aceticus. Acetic Ether. (*Off.*).—Consists principally of ETHYL ACETATE.

Dose.—60 to 90 minims (3·5 to 5·3 Cc.) or 20 to 40 minims (1·2 to 2·4 Cc.) repeated. Sp. Gr. 0·900 to 0·905. Is used as a menstruum in preparing Liquor Epispasticus (*v.p.*149).

ÆTHYL BROMIDUM.

Ethyl Bromide.—*Syn.* HYDROBROMIC ETHER.

Is prepared by distilling a mixture of alcohol, bromine, and phosphorus. It is a colourless, very volatile liquid with a strong peculiar odour and a sweetish warm taste. It has Sp. Gr. 1445 to 1450, boils at 38·8° C. (Schmidt). It should be free from Bromine, Sulphur Compounds (giving yellowish colour), free Hydrobromic Acid, Ethyl and Amyl compounds (test with Sulphuric Acid—yellow if present), and Phosphoretted Hydrogen (garlic odour).

Is recommended as a safe and convenient anæsthetic for short operations (particularly minor nose and throat operations). In suitable dose—for children under three years, 1½ drachms; between three and twelve years, 2 to 2½ drachms; young adults, 2½ to 3½ drachms, on a piece of lint held over nose and throat. The patient is entirely normal on coming round, therefore suitable where chloroform is not considered necessary, and where the action of Nitrous Oxide is not prolonged sufficiently. Does not require any special apparatus.—B.M.J. ii./02,589; L. ii./03,746.

Sœmnoforme (*v.p.*57) contains 5 per cent. of Ethyl Bromide.

Ethyl Bromide Capsules.

Encased in cotton wool and silk, contain 5 minims in each; are convenient for use when fractured. Useful in asthma and epileptic convulsions.

A valuable anæsthetic could possibly be made by combining Ethyl Bromide with Chloroform.—B.M.J. i./03,1425.

Good results from its administration before Ether narcosis.—L. ii./03,745.

For local anæsthesia, recommended as spray or simply short covered contact, not necessary to freeze the part, all feeling ceases. Is of great service to dentists.—L. i./82,212; i./89, 848,900; ii./90,414.

Æthyleni Bromidum. Ethylene Bromide.

Must be distinguished from the above.

Dose.—1 to 2 minims (0·06 to 0·12 Cc.) in alcoholic solution added to milk, or oily solution hypodermically or in **Gelatin Capsules** containing 1 minim.

A colourless liquid, of Sp. Gr. 2·163, crystallizing below 48° F., and containing 90·9 per cent. of bromine. Taste sweet, afterwards burning. Soluble 1 in 4 of 90 per cent. alcohol, miscible in all proportions with absolute alcohol and oils, insoluble in water.

Has been found useful in epilepsy, mostly of long standing; reduces frequency and intensity of attacks. Only in large doses caused nausea.—Th. Gaz. 1891,540; P.J. 1891,1068; B.M.J. i./92,102.

ÆTHYL CHLORIDUM.

Syn. HYDROCHLORIC ETHER, CHLORYL ANÆSTHETIC.

At ordinary temperatures this is gaseous, but condenses into a colourless mobile liquid with a sweetish burning taste. Slightly soluble in water, readily in alcohol. Sp. Gr. 0·9214. On account of its low boiling point (about 50° F.) and the intense cold produced by evaporation, it is useful for producing local anæsthesia in minor surgical operations, such as removal of ingrowing nails, opening of abscesses, and tooth extraction; also for allaying the pain of neuralgia. All fat must be removed from part by washing with soap and then with alcohol or ether before applying. In dental cases the patient is instructed to breathe through the nose during operation, the part is well dried, and other parts protected. Its vapour is inflammable.

Glass Tubes contain 30 grammes, terminating in a fine tube, with spring-capped point, which is directed to the required part, when the chloride is volatilized by the warmth of the hand. It should be held at a distance of 6 to 10 inches from the part to be anæsthetised.—B.M.J. i./92,535; ii./92,1395; B.M.J.E. i./92,79; i./93,55.

These are supplied (1) with fine point for *local* anæsthesia. (2) With coarser spray for *general* anæsthesia, and the tube is graduated.

Either form can be refilled after emptying. The Ethyl Chloride is also supplied medicated **with Carbolic Acid 2 per cent.**, useful for throat work; **Cocaine Hydrochloride** (saturated solution), for dental work; **Iodoform** (saturated solution) useful in septic conditions of the throat and for septic cavities, denuded surfaces, burns and scalds, inflamed vaccinated arms.—L. i./03,1747.

Metal Cylinders are also supplied with screw cap containing 50, 100, and 150 Gm. These may be recharged.

Glass Capsules contain 3 and 5 Cc.

The **combined use of Ethyl Chloride and Nitrous Oxide** has been advocated for dental extractions.—Brit. Dent. Jl.1903,615.

Ethyl chloride applied to nape of neck for hysterical aphonia.—L. i./96, 161; P.J. i./96,139.

Use as a styptic.—L. i./96,230.

Recommended as a general anæsthetic for short operations. — B.M.J.E. ii./99,84; L. ii/01,123; B.M.J. ii./03,867; L. i./03,952; i./04,103.

Ten cases of narcosis in dentistry successful.—L.i./01,698.

Experience of over 600 cases as a general anæsthetic. —L. i./03,952.

Lupus treated by freezing with.—B.M.J. i./01,76; may be considered a safe anæsthetic.—L. ii./03,1531.

On a new mode of use with Clover's inhaler.—B.M.J.i./04,604.

Kelene, a fancy name for Ethyl Chloride.

Is supplied in 60 Gm. glass tubes with automatic spray and stopper for local anæsthesia and general narcosis (graduated), and requires a special mask for administration.

For nasal surgery.—B.M.J. ii./01,896.

Anestile.

A mixture of ethyl chloride and methyl chloride, which does not harden the skin like the latter, and on account of its evaporating at a lower temperature than the former is quicker and more extended in action. It is sold in screw-capped cylinders of various sizes.

Sœmnoforme is said to be a mixture of Ethyl Chloride 60 per cent., Methyl Chloride 35 per cent., and Ethyl Bromide 5 per cent. The liquid is supplied in 60 gramme glass tubes with a special "valve stoppper" for inhalation as an anæsthetic. One-tenth part of the contents of a tube is to be used for an inhalation with as little access of air as possible. A special mask termed "The Ideal" is supplied. Another form of inhaler for.—L. i/03,1677.

As an anæsthetic.—B.M.J. ii./02,1084; i./03,1421. As an anæsthetic for dental and general use.—L.i./03,660, 1168,1377,1667; ii./03,323,496,631; i./04,103.

In using, respiration must be watched carefully. There s no danger of heart failure providing respiration has not ceased.—B.M.J. i./03,1421. (Note the proportions there given are incorrect.)

Glass Capsules of Sœmnoforme contain 3 and 5 Cc.

Narcotile.—The so-called Bichloride of Methyl-Ethylene. Is said to be prepared by the action of Hydrochloric Acid on mixed Ethyl and Methyl Alcohols distilled together. Has an agreeable odour, and is inflammable like Ether. Is supplied in 50 Cc. tubes. The general anæsthesia produced was found satisfactory. Results of 26 cases.—L. i./03,1091.

ÆTHYL IODIDUM.

Ethyl Iodide.—*Syn.* HYDRIODIC ETHER.

May be obtained by distilling a mixture of alcohol, iodine, and phosphorus. It is a colourless liquid, but liable to become coloured by setting free iodine. It has a penetrating ethereal odour; boils at 148° F., has Sp. Gr. 1·94; is not inflammable. When dropped on red-hot charcoal, it gives off an iodine vapour. It is dissolved by alcohol and ether, but not readily by water.

It is useful inhaled as an anæsthetic to relieve the dyspnœa of bronchitic asthma and œdematous laryngitis. As it contains four-fifths of its weight of iodine, it forms a rapid means of saturating the system with this element; it neither impairs appetite nor weakens digestion. General iodization may be produced by painting the iodide on the calf of the leg or between the shoulders, and covering by impermeable dressing.

It is useful for inhalation in œdema of the glottis from catarrhal laryngitis. It acts as an antispasmodic in spasmodic asthma and certain forms of nervous dyspnœa: iodine can be detected in the urine 10 minutes after inhalation, and as long as 30 hours after.

Useful in bronchial catarrh; induces sleep and promotes expectoration when inhaled.—B. M.J.ii./89,1216.

Ethyl Iodide Capsules.

Encased in cotton wool and silk, containing 5 minims in each. The glass capsule is snapped, the fluid absorbed by the wool, &c., and inhaled for four or five minutes. This may be repeated 3 or 4 times a day. The patient requires no assistance, and can take one of the capsules from the bedside, in the dark if necessary.

Ethyl Iodide and Chloroform Capsules contain 5 minims of ethyl iodide and 10 minims of chloroform, and are of the greatest service in the relief of asthma and whooping-cough.

ALCOHOL.

Alcohol Absolutum, Absolute Alcohol (*Off.*).

Syn. ETHYLIC ALCOHOL, B.P. 1885.

Ethyl hydroxide, with not more than 1 per cent. by weight of water. Sp. Gr. 0·794 to 0·7969 representing 99·95 to 99·4 per cent. by volume.

In B.P. 1885 this had Sp. Gr. 0·797 to 0·800, and therefore contained 1 to 2 per cent. of water; the purest Alcohol obtained by Squibb had Sp. Gr. 0·7935 at 60° F. —"Ephemeris," ii.562.

Alcohol Absolutus, P.G. iv., Sp. Gr. 0·796 to 0·800.

Absolute alcohol applied to herpes zoster relieves the pain.—B.M.J.E. ii./01,12.

Alcoholic drinks do not kill typhoid germs in man's stomach or intestines.—B M.J. i./03, 352.

Lancet report on Cognac brandy.—L. ii./03, 1503.

For dietetic use the alcohol from grapes is purest; from corn is next best; from beetroot may be impure; and from potato the most dangerous.—W.

Immature spirits and liquors may contain furfuraldehyde which has been shown to be objectionable. Even liquors made from fruit juices may contain as much as 1 or 2 per cent. of methyl alcohol.

The use of alcohol in medicine—its nutritive value, and its influence on infection.—P.J. ii./02,107.

Acute forms of inflammation of the womb and ovaries and general inflammatory conditions of the female genital organs have been well treated by abdominal compresses, first of alcohol 60 per cent. strength, and afterwards with 90 per cent. together with vaginal tampons 30 per cent. strength.—M.A.04,5.

Alcohol (90 per cent.), Spiritus Rectificatus. —*Syn.* RECTIFIED SPIRIT (*Off.*).

Contains 90 per cent. by volume, or 85·65 per cent. by weight, of ethyl hydroxide. Sp. Gr. 0·8340 (Squibb). Strength 57·80° O.P. (*i.e.*, 100 volumes contain the same quantity approximately of Ethyl Hydroxide as

157·8 volumes of proof spirit). It is slightly stronger (1·35 per cent. by volume) than Spiritus Rectificatus, B.P. 1885, which contained 84 per cent. by weight (=88·65 per cent. by volume) of ethyl hydroxide, and had Sp. Gr. 0·838; 55·85° O.P. It is generally manufactured commercially of higher alcoholic strength, *i.e.*, about 70° O.P., Sp. Gr. 0·809, containing nearly 95 per cent. by weight of ethyl hydroxide, and is diluted as required. The corresponding Alcohol, U.S. has Sp. Gr. 0·820, and contains 94 per cent. by volume of ethyl hydroxide.

Diluted Alcohol (*Off.*).—*Syn.* **Alcohol Dilutum.**

Including Alcohol (90 per cent.)—see above—there are now official five strengths, or "several degrees of dilution," of Ethylic Alcohol, four of which are directed to be prepared from the Alcohol (90 per cent.), and contain respectively 70, 60, 45, and 20 per cent. by volume of ethyl hydroxide. On the next page a Table is given, founded on B.P. and Gilpin's Tables, showing:—

(i.) The volume of Distilled Water necessary to be added to 100 volumes of Alcohol (90 per cent.) for the production of each strength of Diluted Alcohol.

(ii.) The volumes of Alcohol (90 per cent.) and of Distilled Water respectively which, when mixed and reduced to 60° F. (15·5° C.), will produce, allowing for contraction in volume, 1000 Cc., 1 pint, or 1 gallon of each strength of Diluted Alcohol.

The Specific Gravity and the exact Excise (Sikes' strength at 60° F. (15·5° C.), in degrees over proof (O.P. and under proof (U.P.), of each dilution, are given in the first column.

"Proof Spirit" has Sp. Gr. 0·920. This, in th olden time, was found to be the weakest spirit that could be put to the proof of igniting a little gunpowde moistened with it. If the spirit caught fire and inflame the gunpowder it was designated "over proof," and i not, "under proof."

As a rule, in B.P. 1898, Alcohol (90 per cent. replaced Rectified Spirit, and Alcohol (60 per cent. Proof Spirit, where these were ordered in the 188 Pharmacopœia, unless other dilutions were found mor suitable as solvents.

TABLE FOR THE DILUTION OF ALCOHOL (90 PER CENT.) TO WEAKER OFFICIAL STRENGTHS.

Volume Percentage, Specific Gravity, and Excise Strength.	· Alcohol. (90 per cent.)	Distilled Water.	Volume Produced.
70 per cent. Sp. Gr. 0·8900 22·7° O.P.†	100 vols.	+ 31·05 vols.	= 128·57
	777·8 Cc.	+ 241·6 Cc.	= 1000Cc.
	*648·5 Gm.	+ 241·6 Gm.	= 1000Cc.
	15 oz. 266 m.	+ 4 oz. 398 m.	= 1 pint
	124 oz. 215 m.	+ 38 oz. 307 m.	= 1 gal.
	*6 lbs. 7⅞ oz.	+ 2 lbs. 6⅝ oz.	= 8 lbs. 14½ oz.
60 per cent. Sp. Gr. 0·9135 5·20° O.P.†	100 vols.	+ 53·65 vols.	= 150
	666·6 Cc.	+ 357·8 Cc.	= 1000Cc.
	*555·9 Gm.	+ 357·8 Gm.	= 1000Cc.
	13 oz. 160 m.	+ 7 oz. 74 m.	= 1 pint
	106 oz. 320 m.	+ 57 oz. 112 m.	= 1 gal.
	*5 lbs. 9 oz.	+ 3 lbs. 9¼ oz.	= 9 lbs. 2¼ oz.
45 per cent. Sp. Gr. 0·9436 21·2° U.P.†	100 vols.	+ 105·34 vols.	= 200
	500 Cc.	+ 526·6 Cc.	= 1000Cc.
	*417·2 Gm.	+ 526·6 Gm.	= 1000Cc.
	10 oz.	+ 10 oz. 256 m.	= 1 pint
	80 oz.	+ 84 oz. 130 m.	= 1 gal.
	*4 lbs. 2⅞ oz.	+ 5 lbs. 4¼ oz.	= 9 lbs. 7 oz.
20 per cent. Sp. Gr. 0·9760 64·9° U.P.†	100 vols.	+ 355·8 vols.	= 450
	222·2 Cc.	+ 790·7 Cc.	= 1000Cc.
	*185·2 Gm.	+ 791 Gm.	= 1000Cc.
	4 oz. 213 m.	+ 15 oz. 390 m.	= 1 pint
	35 oz. 267 m.	+ 126 oz. 243 m.	= 1 gal.
	*1 lb. 13¾ oz.	+ 7 lbs. 14½ oz.	= 9 lbs. 12¼ oz.

Spiritus Tenuior, Proof Spirit. B.P. 1885, contained 57 per cent. Ethyl Hydroxide by volume =49 per cent. by weight. Sp. Gr. 0·920. Prepared by mixing 5 volumes rectified spirit, *s.g.* 0·838, with 3 volumes of distilled water, the contraction in volume being about 2·5 per cent.

The danger of exposure to cold after excesses in alcohol. —L. i./99,740.

NOTE.—* These figures are the **weights** necessary to produce a gallon and a litre respectively, at 15·5° C. Weighing in some instances may be more convenient in diluting large quantities, particularly in hot weather.—P.J. i./98,501. † Stevenson.

Action of various alcohols on peptic and pancreatic digestion of albuminoids.—C. and D. ii./99,934.

Stili Spirituosi, Alcohol Pencils.—UNNA.

Sodium Stearate 6, Glycerin 2·5, Alcohol *q.s.* to 100. The pencils formed with this mass are supplied in small tin tubes. May be medicated with other medicaments. Useful in skin affections.—Y.B.P. 1903,261.

Spiritus Methylatus, Methylated Spirit.

A mixture of rectified spirit with wood naphtha, containing 10 per cent. by volume of the latter. Sp. Gr. 0·827 to 0·828.

This may be used, by permission of the Excise authorities, by manufacturers who have given a bond, in the preparation of medicines in which, when finished, there is no trace remaining as alcohol, but cannot be retailed without containing in addition $\frac{3}{8}$ per cent. by volume of mineral naphtha of Sp. Gr. not less than 0·8; it is then known as **Denaturalised Methylated Spirit** and forms an opaque mixture with water.

Methods of detecting and determining Methyl Alcohol in pharmacopœial preparations. The oxidation method of Thorpe & Holmes consisting in weighing the amount of Carbon Dioxide produced from the Methyl Alcohol is described.—P.J. i./04,189.

It has become a common intoxicating drink in Aberdeen.—L. ii./03,897.

Alcohol 75% (about 5 volumes of 90%, or of Methylated Spirit, to 1 of water) is used for sterilising the skin of patients, hands of surgeons and nurses, and instruments, before operations.

Spiritus Coloniensis, Arzn., *Eau de Cologne.*

Oil of Bergamot 20, Oil of Lemon 20, Tincture of Musk (1 in 50 Alc. 45 per cent.) 5, Oil of Neroli 2, Oil of Cinnamon 1, Oil of Cloves 1, Oil of Rose 1, Alcohol (90 per cent.) 1,800, Distilled Water 150 (all by weight). Macerate for 8 days, and filter.

Spiritus Myrciæ, Bay Rum. U.S. HAIR LOTION.

Oil of *Myrcia acris* 16, Oil of Orange Peel 1, Oil of Pimento 1, Alcohol (94 per cent.) 1,220. Mix, and add gradually Water to 2,000. After 8 days, filter.

Aqua Mellis, Honey Water.

Yellow Sandal Wood, in shavings, 16, Alcohol (90 per cent.) 640. Macerate 7 days, and pour off the alcohol. Add to the marc, Concentrated Rose and Orange Flower Waters, of each 160, shake well, decant, and add to the alcohol set aside. To this mixture add English Oil of Lavender, Oil of Cloves, of each 2, Oil of Bergamot 1, Oil of Nutmeg, Oil of Sandal, of each $\frac{1}{8}$.

Alcohol Allylicum, Allyl Hydroxide.

If pure, is a colourless liquid miscible with water, with a pungent odour and burning taste. Is antiseptic, and inhibitory to the growth of bacilli.

Alcohol Amylicum, Amylic Alcohol (*Off.*).

Consists principally of iso-primary amylic alcohol, and is prepared by purifying and fractionating fusel oil, collecting that distilling between 257° and 289° F.

Alcohol Methylicum, Pyroxylic Spirit.

Dose.—30 to 60 minims (1·8 to 3·5 Cc.).

If absolute, has Sp. Gr. 0·796, but is not allowed by the Excise to be retailed pure, unless duty-paid. Is recommended internally for vomiting of pregnancy, sometimes combined with menthol. The commercial substance is known as wood naphtha, and contains acetone and other empyreumatic impurities. A purer preparation used in the arts has Sp. Gr. 0·81. It is a solvent of pyroxylin.

May cause optic atrophy, and so blindness, if drunk, or if too much be inhaled at work.—B.M.J., i./04, 151.

Acetone. DIMETHYL-KETONE.

A clear, colourless, light, neutral liquid, with ethereal odour and camphoraceous taste, obtained by the dry distillation of acetates, miscible with water, alcohol, ether, chloroform, and oils, and is a ready solvent of fats and resins, also of cantharidin. If pure, its Sp. Gr. is 0·7966 at 15° C. Is largely used in the manufacture of chloroform. It has been employed in dyspnœa with advantage in dose of 1 to 1½ drachms daily.

ALDEHYDUM DILUTUM.

A mixture of alcohol and Aldehyde (Acetaldehyde) containing 15 per cent. of the latter. Aldehyde is an oxidation product of alcohol preceding the formation of acetic acid, into which, if in the pure state, it readily passes. Diluted Aldehyde is a colourless liquid neutra to test papers, and has an ethereal suffocating odour, producing spasm of the glottis when respired.

Its action is antagonistic to that of the Nitrites.—(D. J. Leech).

Vapor Aldehydi.

Diluted Aldehyde 80 minims, water to 1 ounce.

A teaspoonful to a pint of water at 140° F.

Useful in catarrhal congestions and in ozæna.

Metaldehyde. *Dose.*—2 to 8 grains (0·13 to 0·52 Gm.), in cachet or pills.

In silky white acicular crystals, slightly soluble in alcohol and ether, insoluble in water. Has been found a useful sedative and hypnotic.

Paraldehydum, Paraldehyde (*Off.*)

Dose.—30 to 120 minims (1·8 to 7 Cc.), or more, in diluted syrup or almond mixture, repeated if needed in ½ an hour.

A colourless liquid at the ordinary temperature, although it, like glacial acetic acid, crystallizes if cooled below 50° F.; Sp. Gr. 0·998; may be obtained by treating Aldehyde with dilute sulphuric or nitric acid. Its odour and taste somewhat resemble Aldehyde, but it does not cause the same suffocating action when respired. Soluble 1 in 10 of water. It and its solid congener Metaldehyde are polymers of Aldehyde. It is a useful sedative and hypnotic.

Elixir Paraldehydi.

Dose.—1 to 3 drachms (3·5 to 10·5 Cc.).

Paraldehyde 240, Glycerin 240, Alcohol (90 per cent.) 480, Oil of Cinnamon 4, Oil of Bitter Orange 8, Saccharin 1.

Mistura Paraldehydi.

Paraldehyde 2 drachms, Essential Oil of Almonds (*sine* Acid. Hydrocyanic.) 3 minims, Syrup 1 ounce, Liquid Extract of Liquorice 2 drachms, water to 4 ounces. This covers the taste of the compound and forms four doses of ½-drachm or two doses of 1 drachm.

It is more satisfactory than mixtures flavoured with Lemon Essence—P.J. i /04.220—but the taste of the substance is so persistent and nauseating that it is difficult to cover it.

An Emulsion of Paraldehyde 2 drachms, Tragacanth Mucilage ½ ounce, Syrup of Orange 1 ounce, keeps fairly well. Alcohol is not advisable for flavouring purposes, as the sedative action may be impeded by the stimulant properties of the spirit.—C.D. i./04,303.

The following capsules are preferable ;—

Paraldehyde Capsules contain 20, 30 and 40 minims.

Dose.—1 or more.

Paraldehyde is contained, and is probably the principal therapeutic agent, in **Spiritus Ætheris Nitrosi,** B.P.

It resembles chloral in its physiological action but, differs from it in strengthening the heart's action, whilst it diminishes its frequency. It greatly increases the flow of urine, but does not affect the skin, nor does it give rise to digestive disturbances, to headache, or other unpleasant symptoms. Is satisfactory as an enema.—B.M.J. i./83,215,956 ; ii./91,115.

Used 150 times in asylum practice. A useful hypnotic quicker than chloral in dose of 30 to 90 minims.—L. i./85,201.

Occasionally failed, when it produced slight excitement; vomiting, nausea, and giddiness sometimes caused. Report of Therapeutic Committee B.M.A.—B.M.J. ii./90,237.

Poisonous effects after 13 drachms.—L. ii./00,875.

Three and a half ounces taken by error; 9 hours afterwards strychnine hypodermically and ammonia applied and injected, recovered consciousness in 34 hours.—B.M.J. ii./91,1254 ; M.C. Jan. 1892,256. Two ounces proved fatal (Westcott).

Of use in spasmodic asthma, relieves spasm, and induces sleep.—B.M.J. i./93,65 ; ii./96,725.

Aldehydum Formicum, Formic Aldehyde.

Formic Aldehyde in vapour has been shown to be an active antiseptic, preventing decomposition and fermentation, while it is comparatively non-poisonous.—L. ii./97,695.

Formaldehydum Solutum, P.G.iv., P.Aus.Add.

Syn. FORMOL, FORMALIN.

Dose.—1 minim, well diluted.

An aqueous solution of formic aldehyde, containing about 40 per cent. Sp. Gr. 1·079 to 1·081.

It is prepared by oxidation of methyl alcohol. Suitably diluted and combined as in Lysoform (*p.*68), it has been used for wound treatment, and for sterilising surgical instruments and the hands of operators. For disinfecting rooms, a 1 or 2 per cent. solution of formalin may be used as spray, and is non-injurious to coloured fabrics. This strength has also been suggested as a pigment and spray for diphtheria. Useful as a preservative for embalming and the preservation of corpses for dissection. It shrivels up soft corns causing them finally to drop off if applied daily. Under the name of **Durine** a preparation is sold for this purpose.

Formol is more especially useful as a hardening agent for microscopic objects and museum specimens in place of alcohol, as it does not cause shrinking or clouding of tissue, particularly of eyes; cellular structures and colouring matters are well preserved. As a hardener, Formol should be diluted about 25 times, and about 10 times for museum use, but for preservative purposes a far weaker solution is sufficient.

Antidote.—Ammonia.—B.M.J.E. ii./01,7.

As a lotion for ophthalmia and trachoma gives relief. —B.M.J. i./96,209.

Useful pigment for ringworm of the scalp.—B.M.J. ii./96,650; i./97,972; P.J. ii./96,296.

Inhaled for catarrh and pneumonia as a killer of micro-organisms.—B.M.J. i./97,202.

Two per cent. solution recommended for disinfection of sick rooms by spray and wet sheets.—Pr. lviii.109.

Cases of poisoning by.—P.J. ii./99,295; B.M.J.E. i./01,72.

Local use recommended for ozœna.—B.M.J. ii./99,999.

Local application to throat in lotion for pertussis.—B.M.J.E. i./99,48.

Formalin is a very useful remedy for foul sweating of the feet.—B.M.J.E. ii./98,99.

Formalin applied to sarcoma and bleeding tumours, checks hæmorrhage, hardens the substance and assists their removal.—B.M.J. i./99,337.

Pigment of 1 to glycerin 3, for throat, mouth, urethra, and for parasitic skin diseases.—L. i./01,468.

Successful as a pigment for lupus. — B.M.J. i./01,1078.

For laryngeal growths.— B.M.J. ii./01,885.

General uses in phthisis.—B.M.J. ii./03, 1050.

Internal use in 1 minim doses for puerperal fever.—L. ii./03,1163.

Angina, especially angina follicularis, treated by painting the tonsils with 2 per cent. solution in glycerin.—M. 1901,85.

A solution of 1 in 100,000 of the blood has been passed through the lungs in phthisis with encouraging results.—L. i./03,98.

For puerperal fever uterine injection of 1 ounce of glycerin with 3 per cent. of formalin.—L. ii./03, 1229,1251.

Alopecia areata treated with 10 per cent. or stronger compressess.—M. 1901, 85.

Rabies is said to have been cured by intravenous injections of Formalin.—Med. Record March, 1903.

Inoperable cancer treated by compresses of 2 per cent. of *Formaldehyde* (*i.e.*, commercial 40 per cent. solution 1, water 19,).—B.M.J. i /03,1257,1348.

Whooping cough treated by, *vide* Paraform, *p.*69.

Formaldehyde Inhalant. Chowry Muthu.

Formalin 40 per cent. 1, chloroform 1, alcohol 90 per cent. 2.

For inhalation in phthisis. 5 to 10 drops are sprinkled on cotton wool contained in a perforated zinc inhaler of pyramidal shape and renewed every two hours or so. The success of the treatment of phthisis by this method lies in its being perseveringly used for as long as possible every day.—B.M.J. ii./02,1672.

The proportion of chloroform seems excessive.—W. A small bulbous inhaler with absorbent material better—to be inhaled through the mouth, and exhaled through the nose, thus bathing the whole respiratory tract.—L. i./03,771.

Citric acid and tartaric acid compounds with formaldehyde have been prepared—probably methylene citric acid and dimethylene tartrate. — Y. B. P 1902,83.

May be estimated by means of silver nitrate.—Y.B.P. 1902,83 ; or as follows:—Dilute 10 Cc. to 200 with water, neutralise and add 10 Cc. of this dilution to ammonium chloride 0·5 Gm. dissolved in 3 or 4 Cc. of water. Titrate with normal potassium hydroxide, of which 1 Cc. = 0·045 Gm. Formaldehyde, using litmus as indicator.—Y.B.P. 1903,84.

Amyloform.

A compound prepared by the action of formic aldehyde on starch; is an inodorous, insoluble, white powder, unaltered by heat. Has been used as an antiseptic dressing for wounds.—P.J. ii./96,290; L. ii./97,40.

Formoform.

A dusting powder composed of formaldehyde, thymol, zinc oxide and starch.—P.J. ii./98,256.

Citarin. *Syn.* SODIUM ANHYDROMETHYLENE CITRATE.

Dose.—30 grains (2 Gm.) three or more times a day.

Soluble 1 in less than 1 of water, and only slightly soluble in alcohol 90 per cent. A compound of formaldehyde and citric acid, easily liberating formaldehyde. A uric acid solvent and eliminant. Recommended in the treatment of gout and rheumatism.

Uritone.

Dose.—5 to 15 grains in capsules.

A compound derived from Formaldehyde and Ammonia; liberates Formaldehyde, and is used as an urinary antiseptic.—M.A. 1904,780.

Dextroform.

A compound of dextrin and formic aldehyde; a white powder soluble in water and glycerin; introduced as an antiseptic, specially useful in gonorrhœa.—P.J. ii./97,5; L. ii./97,40.

Gargarisma Formaldehydi, G.H.

Solution 1 minim to water 1 ounce.

Glutol. *Syn.* FORMALIN-GELATIN.

A compound of formic aldehyde and gelatin in whitish granular insoluble powder; recommended as an antiseptic dressing for burns, cavities, and suppurating ulcers.—Pr. lix.,220; B.M.J.E. ii./99,95.

Prevents the pitting of smallpox.—L. i./02,1053.

Lysoform. A liquid formaldehyde potash soap. It is highly antiseptic, relatively non-poisonous, inodorous, deodorant and cheap; has the highest bactericidal action, even in 2 to 5 per cent. solution; does not coagulate albumen, and is miscible with water and alcohol in all proportions. It is suitable for surgical operations and for instrument disinfection. A 5 per cent. solution is rapidly fatal to B. typhi abdominalis, B. coli communis, and the *Staphylococcus pyogenes aureus*, and a 3 per cent. solution destroys

B. anthracis spores in 24 hours. A 2 per cent. solution is sufficient for general purposes, and is better freshly prepared. The stock bottles should be kept well corked. In using warm solutions a temperature of 40° to 50° C. should not be exceeded; this is suitable for antiseptic irrigation of the vagina, uterus, abscess cavities, &c. Diluted it is useful for psoriasis, lupus, eczema, and as a wash for perspiring feet. A **Mouth Wash, Tooth Paste, Tooth Powder, Dusting Powder and Toilet Soap** are prepared, also **Pessaries** of Cacao Butter, containing 2 grains each. In the sick room and operating theatre its deodorant properties will be evident. It is used for hand disinfection; it combines the mechanical action of soap, lathering profusely, with its bactericidal power, and, therefore, penetrates the skin, lubricates it, and keeps it soft. It is valuable also for general household disinfection, for deodorisation and cleaning. Good results have been obtained with it in veterinary use.

Bottles contain 250 Gm. (about 8 ounces), 500 Gm. (about 16 ounces), 1,000 Gm. (about 32 ounces), 2,500 Gm. (about ½ gallon). Tins containing 5,000 Gm. (about 1 gallon) are convenient for surgeons' use.—L. ii./03,1307.

Paraform, Paraformic Aldehyde, Tri-oxymethylene.

A polymer of formic aldehyde, in white friable amorphous masses, but slightly soluble in water, with an irritating vapour. Heated by an enclosed spirit lamp, it sublimes, combines with the products of combustion, is converted into formic aldehyde, and is a convenient means of applying the latter in vapour as an antiseptic and disinfectant. Tablets of 1 gramme, **Formalin-Disinfecting Tablets,** are prepared for use in the Alformant vaporiser, the number requisite being from one to twenty tablets per 1,000 cubic feet, the latter number ensuring thorough disinfection.—P.J. ii./97,101; B.M.J. i,/98,1542; B.M.J.E. ii./98,23.

Experiments in disinfection of rooms.—B.M.J. i./99, 1280.

Catheters may be maintained aseptic by being kept wrapped in lint impregnated with 20 per cent. of paraform.

A pigment of paraform 8 parts with collodion 27, applied three times a day to warts is efficacious.—B.M.J.E. ii./99,80; P.J. i./00, 170; ii./00,703.

Whooping-cough treated by inhalation of Formalin vapour produced by volatilising one tablet per 700 cubic foot space—patients remain in a room thus fumigated a quarter of an hour.—M.1901,85.

ALOES.

Aloe Barbadensis (*Off.*).

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

Barbados or Curaçao Aloes, from *Aloe vera*, *A.chinensis*, and probably other species; commercially comes from Curaçao.

Aloe Socotrina (*Off.*). *Syn.* HEPATIC ALOES (*if opaque*).

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

Socotrine or Zanzibar Aloes, from *Aloe Perryi* and probably other species; imported principally *via* Bombay.

The Natal or Cape varieties of Aloes are not official.

Decoctum Aloes Compositum (*Off.*).

Dose.—½ to 2 ounces (15 to 60 Cc.).

Has Extract of Barbados Aloes 1 in 100. Was known as *Baume de Vie.*

Extractum Aloes Barbadensis (*Off.*).

Dose.—1 to 4 grains (0·065 to 0·26 Gm.).

Barbados Aloes yield about 75 per cent. of Extract.

Extractum Aloes Socotrinæ. B.P. 1885 (not now official).

Dose.—2 to 4 grains (0·13 to 0·26 Gm.).

Extractum Colocynthidis Compositum (*Off.*).

Dose.—2 to 8 grains (0·13 to 0·52 Gm.).

Contains about half its weight of Extract of Barbados Aloes.

Pilula Aloes Barbadensis (*Off.*). As B.P. 1885.

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Pilula Aloes et Asafetidæ (*Off.*). As B.P. 1885.

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Pilula Aloes et Ferri (*Off.*).

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Exsiccated Ferrous Sulphate 1, Barbados Aloes 2, Compound Powder of Cinnamon 3, Syrup of Glucose 3 or *q.s.*

Tablets are also prepared 4 grains each. An excellent remedy for habitual constipation.—W. W. W.

Pilula Aloes cum Mastiche. Lady Hesketh's, Lady Webster's, or Lady Crespigny's Dinner Pills.

Barbados Aloes 2 grains, Mastic $\frac{2}{3}$ grain, Rose Petals $\frac{2}{3}$ grain, Syrup *q.s.*

They act principally on the bowel, mastic being insoluble in the stomach.

Pilula Aloes et Myrrhæ (*Off.*).

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Socotrine Aloes 2, Myrrh 1, Syrup of Glucose 1½ or *q.s.*

Tablets are prepared 4 grains each.

Pil. Aloes, Cascaræ et Hyoscyami.

Extract of Barbados Aloes 1, Extract of Cascara 1, Extract of Hyoscyamus 1. In grains for one pill.

Pilula Aloes, Nucis Vomicæ et Belladonnæ.

Extract of Socotrine Aloes 1, Ext. of Nux Vomica ½, Extract of Belladonna ¼. In grains for one pill.

Pilula Aloes Socotrinæ (*Off.*). As B.P. 1885.

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Pilula Cambogiæ Composita (*Off.*).

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Gamboge 1, Barbados Aloes 1, Compound Powder of Cinnamon 1, Hard Soap 2, Syrup of Glucose 1 or *q.s.*

Pilula Colocynthidis Composita (*Off.*). As B.P. 1885.

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Contains about one-third of its weight of Barbados Aloes.

Tablets contain 4 grains each.

Pilula Colocynthidis et Hyoscyami (*Off.*). As B.P. 1885.

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Pilula Rhei Composita (*Off.*).

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Rhubarb 48, Socotrine Aloes 36, Myrrh 24, Hard Soap 24, Oil of Peppermint 3, Syrup of Glucose 44. This pill owes most of its purgative properties to Aloes, which forms one-fifth of its weight. It may be kept in specie (*sine* Glucose Syrup), 3 parts = 4 of mass. If the Oil of Peppermint 3 (which is objected to by pill manufacturers) were replaced by Menthol 2, dissolved in Alcohol *q.s.*, the pill would be improved.

Tinctura Rhei Aquosa, P. Aus. Add.

Dose.—20 to 60 minims (1·2 to 3·5 Cc.).

Rhubarb sliced 10, Borax 3, moisten with Alcohol (70 per cent.) 20, set aside 1 hour, add Water 150, macerate 24 hours, shaking frequently, and filter.

Tinctura Aloes (*Off.*).

Dose.—1½ to 2 drachms (4·3 to 7 Cc.) or ½ to 1 drachm (1·8 to 3·5 Cc.) repeated.

Extract of Barbados Aloes 1, Liquid Extract of Liquorice 6, Alcohol (45 per cent.) *q.s.* to 40.

Tinctura Aloes Composita, P. Aus. Add.

Dose.—1 to 2 drachms (3·5 to 7 Cc.).

Cape Aloes 15, Gentian Root 2½, Rhubarb 2½, Zedoary Root 2½, Saffron 2½, Alcohol (70 per cent.) 500.

Tinctura Benzoini Composita (*Off.*). *Syn.* FRIARS' BALSAM, TRAUMATIC BALSAM.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.), with mucilage or yolk of egg.

Is the same as in B.P. 1885, using 90 per cent. alcohol in place of rectified spirit.

Formerly much used empirically as a wound dressing, to promote healing by first intent, as it gives an antiseptic resinous coating. A drachm to a pint of hot water is valuable as a sedative inhalation in acute laryngitis.

Tinctura Benzoini Simplex, B.P.C.

One in 10 of Alcohol (90 per cent.). One in Rose Water 40, useful as a face lotion in urticaria and in irritated conditions of the skin.

Most of the galenical preparations of Aloes are overcooked. If any preparation more definite than good commercial Curaçao Aloes be needed, Aloin, which is crystalline and definite (preferably Barbaloin), should be employed. Good Barbados Aloes yields 75 per cent. of extract, but all of the latter will not redissolve. Socotrine Aloes, which always contains much mechanical impurity, yields only about 45 per cent. of similar extract. Combined with soap in pills, aloes is rendered more soluble; this, or a weak alkaline solution, is said to prevent the griping tendency, and extract of liquorice covers the nauseous taste. The Compound Decoction of Aloes contains these with the aromatic Compound Tincture of Cardamoms, but the process for preparing it is too complicated. The writer suggests the following :—

Mistura Aloes.

Dose.—1 to 4 drachms (3·5 to 15 Cc.).

Barbados Aloes 30, Myrrh 15, Potassium Carbonate 15, mix, add Liquid Extract of Liquorice 120 ; dissolve, and add Compound Tincture of Cardamoms *q.s.* to 1,000. Strain, set aside, and, after seven days, decant. Contains Aloes 1 in 33, and has about three times the activity and virtue of the Compound Decoction of Aloes, *sine* Saffron. No boiling is needed, as the solution of the drugs is nearly complete by trituration.

Cathartic action of drugs of the aloe group is due to oxy-methyl-anthraquinones. Alkalis assist the oxidation of aloins into Emodin, which is tri-oxy-methyl-anthraquinone, *v.pp.*153,470.—P.J. ii./98,78,325.

Pulvis Aloes cum Canella, P.D. 1836. *Hiera Picra.*

Dose.—3 to 10 grains (0·32 to 1·3 Gm.).

Hepatic Aloes 16, White Canella Bark 3. Much used as a domestic emmenagogue.

Aloin (*Off*).

Dose.—½ to 2 grains (0·032 to 0·13 Gm.)* or less in a pill with hard soap.

A principle obtained officially from Barbados or Socotrine Aloes in odourless yellow crystals, having the characteristic taste of aloes ; soluble in cold water, 1 in 140 (Barbaloin), freely soluble in alcohol. Aloes contains as much as 30 per cent. of Aloin.

Practically all the Aloin in U.S.A. is made from Curaçao Aloes, and all in England from Barbados Aloes.—Am. Journ. Pharm. lxx.398.

The activity of Aloin is increased by giving it with an alkali, presumably to decompose it, as Aloin appears not to be itself an active purgative, but to become gradually decomposed in the intestines into a more active body, hence its slowness in action.—B.M.J.E. ./91,135.

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* This dose is perhaps a little high ; ¼ grain may be conidered an aperient, and 1 grain a full purgative dose.—U.S. Dispensatory.

Tablets of Aloin, $\frac{1}{10}$ and $\frac{1}{2}$ grain.

Pilula Aloin Composita.—For constipation, Sir A. Clark recommended Aloin, extract of nux vomica, sulphate of iron, myrrh, and soap, of each $\frac{1}{2}$ grain in a pill taken half an hour before last meal of the day. If fæces be hard and dry and there be no special heart weakness, add $\frac{1}{2}$ grain of ipecacuanha, and should griping be caused add also $\frac{1}{2}$ grain of extract of belladonna.

Tablets, Anti-Constipation.—*Dose* 1 or 2.

Aloin, Extract of Nux Vomica, Ferrous Sulphate, Myrrh, Soap, Belladonna Extract, of each $\frac{1}{2}$ grain.

Pilula Aloin, Strychninæ et Belladonnæ.—*Dose.*—1 or 2. Aloin $\frac{1}{5}$, Strychnine $\frac{1}{60}$, Alcoholic Extract of Belladonna, $\frac{1}{8}$, in each; in fractions of a grain, make one pill; of a gramme, fifteen pills.

Tablets, of Aloin Compound. Aloin $\frac{1}{5}$ gr., Strychnine Sulphate $\frac{1}{60}$ gr., Ext. of Belladonna $\frac{1}{8}$ gr., Ipecacuanha $\frac{1}{16}$ gr.

ALUMINIUM.

Ferro-Alumen, *v.p.*266.

Glycerinum Aluminis (*Off.*). 1 in 6, *v.p.*272.

Ophthalmic Discs contain $\frac{1}{250}$ grain of alum in each.

Points of Alum, also of **Copper Sulphate,** mounted in wooden cases, are prepared for ophthalmic and other uses.

Solube' Aluminis 10 grains (0·65 Gm.)

One dissolved in two or three ounces of water may be used as an eye wash, gargle, mouth wash, &c.

Liquor Aluminii Acetici, P.G.

Dissolve Aluminium Sulphate 30 in water 80, add Acetic Acid B.P., by weight, 34, and while constantly shaking pour in by degrees Precipitated Calcium Carbonate 13 mixed with water 20. Set aside for 24 hours to deposit, and shake frequently, then decant, press the sediment, and filter the solution. Contains 7½ to 8 per cent. of Aluminium Sub-acetate. Diluted 1 to 3 of orange flower water for mouth lotion.

Diluted with twice as much water, thus making a 2½ per cent. solution, it has been used as an antiseptic lotion, and gauze impregnated with a 5 per cent. solution has been used as a dressing (*vide* Gauze, ribbon, *p.*631).

Aluminii Aceto-Tartras.—*Syn.* ALSOL.

In shining masses, soluble in water. An astringent and antiseptic employed in 1 or 2 per cent. solution as mouth wash and gargle. Also for wound treatment the same strength. Alsol Liquid is also prepared.

For conjunctivitis.—B.M.J.E. ii./03,68.

Aluminii Chloridum. *Dose.*—2 to 4 grains (0·13 to 0·26 Gm.).

For medicinal use this is met with as a white amorphous powder, very deliquescent. Of distinct service in locomotor ataxy; relieves the pain.—Gowers, 'Diseases of the Nervous System,' 2nd ed. vol. i. p. 437; L. ii./99,1826. For the lightning pains, good results. —Med. Record, Feb. 1903.

Liquor Aluminii Chloridi.

A straw-coloured inodorous liquid, with an astringent taste and acid reaction, Sp. Gr. 1·250; may be obtained by the double decomposition of aluminium sulphate and barium chloride. It possesses strong antiseptic properties.

Lapis Divinus, R.O.H. Cuprum Aluminatum P.G.; P.Jap. (G.H. has less camphor.)

Potassium Alum, Copper Sulphate, and Potassium Nitrate, of each 1 part are fused together, Camphor equal to $\frac{1}{50}$ of the whole previously mixed with an equal weight of Alum is added and incorporated, and the mixture run into moulds to form pointed sticks.

Pulvis pro pedibus, P.Helv.

Potash Alum 15, Talc 85, in fine powder. For tender feet. Another useful form is **Foot Powder**; Talc 2, Boric Acid 2, Orris Powder 1, Zinc Oleate Powder 1.

Alumnol.

An aluminium salt of naphthol-sulphonic acid, in whitish powder. Very soluble in water; also soluble in alcohol and glycerin. Is precipitated by albumen, but redissolved by excess. Dissolves in purulent discharges, and does not stop up discharging wounds. Has been found useful in lotion, and gargle ¼ to 1 per cent. ½ to 2 per cent. applied to suppurating surfaces and secreting cavities,—pharyngitis, rhinitis, ozœna, and gonorrhœa. Also in ointment 1 to 5 per cent.; and suppositories.— —P.J. 1893,605; Pr. xlix.,453; B.M.J.E. ii./92,99; i./93,64.

Aluminii Sulphocarbolas. *Syn.* SOZAL.

A light chocolate-coloured granular substance solubl 1 in 0·7 of water, and 1 in 20 of glycerin, and 1 in 1 of alcohol 90 per cent. Solution 1 per cent. strengt has been employed as an injection in tuberculosis an cystitis.

AMMONIUM.

Ammonii Bicarbonas.

Dose.—3 to 10 grains (0·2 to 0·65 Gm.).

In minute white crystals, soluble 1 in 8 of water. As a diffusible stimulant is less caustic in taste and more palatable than the official carbonate; is specially adapted for effervescing draughts in conjunction with citric acid.

Neuralgia relieved by.—B.M.J. i./03,195,289.

Ammonii Bromidum (*Off.*).

Dose, 5 to 30 grains (0·32 to 2 Gm.).

Is used where the potassium salt may cause too much depression.

Inhalation of vapour of ammonium bromide beneficial in various forms of asthma.—L.i/90,1012,1068.

Tablets, 5 grains (0·32 Gm.), and 10 gr. (0·64 Gm.).

Dose.—1 to 6 or more.

Effervescent Ammonium Bromide.

Dose.—1 drachm or more. Contains 5 grains in 1 drachm.

Pastilli Ammonii Bromidi. 1 grain in each with Glyco-gelatin basis. For whooping-cough, spasmodic affections of the throat, and loss of voice.

Trochisci Ammonii Bromidi with Gelatin basis, containing 1 grain each, are very useful sucked occasionally in asthma and for tickling cough.

Rubidium-Ammonium Bromide, *v.p.*465.

Ammonii Chloridum (*Off.*).

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

White crystals soluble in 3 of water and 60 of alcohol 90 per cent.

Liquid extract of liquorice disguises its nauseous taste.

Lotio Ammonii Chloridi, Gt. Orm. H.

Ammonium Chloride 15 grains, Methylated Spirit 1 drachm, water to 1 ounce.

Tablets, 3 and 5 grains,

Tablets of Ammonium Chloride 3 grains and Borax 2 grains.

Trochisci Ammonii Chloridi, T.H. These are marked M.A. Contain 2 grains of the salt in each, with black currant paste as a basis. One every 3 hours useful in congestion of the pharynx and larynx, loss of voice arising from cold and bronchial cough.

Trochisci Ammonii Chloridi cum Glycyrrhiza. Contain 3 grains of each.

Tablets are prepared containing Ammonium Chloride 3 grains and Liquorice Extract 3 grains.

Trochifci Ammonii Chloridi Compositi, T.H. Contain Ammonium Chloride 1 grain, with 2 grains of Potassium Chlorate and ¼ grain approximately of Cubebs.

Vapor Ammonii Chloridi is used in affections of the throat and Eustachian tube. Produced by air being drawn through hydrochloric acid and ammonia in a suitable apparatus and purified by passing through water or a moist sponge, *vide* Surgical Dressings—Inhalers.

Ammonii Iodidum, U.S.—*Dose*, 3 to 20 grains (0·2 to 1·3 Gm.).

A white granular salt, in minute crystalline cubes, very deliquescent and soon becoming yellow or yellowish-brown on exposure to air; odourless when white, with a sharp saline taste and a neutral reaction. Soluble 1 in 1 of water, 1 in 3 of 90 per cent. alcohol. Should be kept from light and air, or free iodine is quickly liberated. It causes less depression than potassium iodide, and is preferred to the latter for syphilis and rheumatism.

Ammonii Nitras. B.P. 1885.

The fused salt is used for the production of **Nitrous Oxide**; on heating to 350° F. it is resolved into this gas and the vapour of water.

Death under nitrous oxide.—L. i./99,959; B.M.J. i./99,850. Comments on same.—L. i./99,1053.

Nitrous oxide combined with oxygen.—L. i./00,1435.

Ammonii Valerianas.

Dose.—1 to 8 grains (0·065 to 0·52 Gm.). In masses of flat colourless deliquescent crystals, with a strong valerian odour, very soluble in water and alcohol. A 25 per cent. aqueous solution is prepared for dispensing. *Valérianate d'Ammoniaque Liquidé* (Pierlot), a French specialty, is Valerianic Acid 3, Ammonium Carbonate *q.s.* to neutralise, Alcoholic Extract of Valerian 2, Water 95. *Dose.*—2 to 4 drachms (7 to 15 Cc.).

Linimentum Ammoniæ (*Off.*).

Solution of Ammonia 1, Almond Oil 1, Olive Oil 2. Shake together. 'Hartshorn and Oil' is usually Solution of Ammonia 1, and Almond Oil 3. Shake together.

Liquor Ammoniæ (*Off.*), Sp.Gr. 0·959. Contains 10 per cent. by weight of NH_3.

Dose.—10 to 20 minims (0·6 to 1·2 Cc.).

Hypodermic injections of 2 to 6 minims for collapse; or up to 36 minims for snake poisoning, equal to 12 minims of the stronger liquor.

Cobra snake bite, patient recovered after hypodermic injections of 15 minims of the strong liquor diluted with an equal amount of water.—Pr.xl.291.

Liquor Ammoniæ Fortis (*Off.*), Sp.Gr. 0·891.

Dose.—3 to 6 minims (0·18 to 0·35 Cc.).

Is three times the strength of last preparation.

Liquor Ammoniæ Fortissimus, Sp.Gr. 0·88. It should be about 2·6 per cent. stronger than the last preparation.

Determination of carbon dioxide, tarry matter, and pyridine in commercial solutions.—Y.B.P. 02,31.

Liquor Ammoniæ Domesticus, Household Ammonia.

Oleic Acid 1, Rectified Spirit 1, mix and add strong Solution of Ammonia 7, Distilled Water 7; shake well. For use diluted as a detergent of the skin. In the bath 1 in 1000 to 2000 softens the water; also for general domestic purposes.

Hair Lotion, Erasmus Wilson's.

Strong solution of Ammonia 1, Almond Oil 1, Spirit Rosemary (B.P. 1885) 4, Honey Water 2.

Liquor Ammonii Acetatis Fortior. B.P. 1885.

Dose.—25 to 75 minims. (1·5 to 4·5 Cc.). 1 with distilled water *q.s.* to 5 forms

Liquor Ammonii Acetatis (*Off.*).

Dose.—2 to 6 drachms (7 to 21 Cc.). Keep in green glass bottles.

Most serviceable in delirium tremens, one drachm every hour at first, reduced gradually.—B.M.J.ii.'92,299.

Liquor Ammonii Citratis Fortior. B.P. 1885.

Dose.—30 to 90 minims (1·8 to 5·3 Cc.).

One part to three of distilled water forms

Liquor Ammonii Citratis (*Off.*).

Dose.—2 to 6 drachms (7 to 21 Cc.).

This preparation is of the same strength as before, but is now officially directed to be prepared by neutralising Citric Acid 1, with Ammonium Carbonate in Distilled Water *q.s.* to 8.

Tinctura Ammoniæ Composita, P.L.—*Syn.* EAU DE LUCE.

Mastiche 2 drachms, Rectified Spirit 9 drachms, Oil of Lavender 14 minims; macerate, decant, and add Stronger Solution of Ammonia 20 ounces. Topically relieves bites of insects.

AMYGDALA AMARA.

Bitter Almond. (*Off.*).

Oleum Amygdalæ (*Off.*) is expressed from the seeds (Peach or Apricot Kernel Oils, or mixtures are sold commercially as Oleum Amygdalæ Persicæ), which yield about 40 per cent., and the residue is utilised for the production of Essential Oil of Bitter Almonds (Benzaldehyde or Oleum Amygdalæ Essentiale *sine* Acido Hydrocyanic.). The Essential Oil containing the Hydrocyanic Acid to the extent of about 5 per cent. is also prepared and must be carefully distinguished from this. The glucoside **Amygdalin** (odourless crystals soluble in 12 parts of water with slightly bitter taste and neutral action) under the influence of **Emulsin**, also a constituent in the seeds, of the nature of a ferment, hydrolyses (takes up water) on coming in contact with it, forming grape sugar and Benzaldehyde-hydrocyanic Acid. This latter compound is decomposed and the Hydrocyanic Acid is removed so as to produce the above Essential Oil suitable for flavouring purposes. A similar body to Amygdalin, or one identical with it, is contained in Prunus Laurocerasus (Cherry Laurel leaves). Aqua Laurocerasi is standardised (*Off.* and C.U.D.), to contain 0·1 per cent. Hydrocyanic Acid. It also contains some Benzaldehyde; Aqua Amygdalæ Amaræ should contain the same proportion of Hydrocyanic Acid.—C.U.D

Amygdalin is also contained in the bark of Prunus Serotina (Virginian Prune or Wild Cherry bark), and the same decomposition occurs when this drug is bruised with water.

Nitrobenzene, "Oil of Mirbane," has an odour similar to Benzaldehyde, and is used in cheap perfumery.

Amygdala Dulcis also yields about the same amount of Oleum Amygdalæ (*Off.*) and contains Emulsin, but is free from Amygdalin.

Sterilised Olive, (Oleum Asepticum, L.H.) or **Almond Oil,** or **Liquid Paraffin**, intended for hypodermic injection, (Olive Oil for subcutaneous feeding L.H.), or lubricating catheters, is prepared by heating the oil in small flasks or bottles tightly plugged with cotton wool to 120° — 140° C. for ½ hour in a sterilising oven.

Physicians should specify carefully which oil is to be employed for "Sterilised Oil."

AMYL NITRIS (*Off.*).

Dose.—By inhalation, the vapour of 2 to 5 minims (0·12 to 0·3 Cc.). By the mouth, ½ to 1 minim (0·03 to 0·06 Cc.).

A yellowish ethereal liquid with a peculiar not disagreeable odour; produced by the action of nitrous acid on fractionated amylic alcohol and consisting chiefly of iso-amyl nitrite.—Sp. Gr. 0·870 to 0·880; about 70 per cent. distils between 194° to 212° F.,—it is difficult to obtain uniform (*v.p.*82); soluble in alcohol, insoluble in water. Should be kept cool; by exposure to the air it becomes comparatively inert. Tested by means of Allen's Nitrometer, a 5 per cent. solution in alcohol should yield not less than six times its volume of nitric oxide gas.

Amyl nitrite dilates the vessels and lowers blood-pressure.

In 30 to 40 seconds after inhaling or swallowing a dose it flushes the face, and increases the heat and perspiration of the head and neck.

It has been successful in relieving angina pectoris, sea-sickness, ague, spasmodic asthma, migraine, neuralgic dysmenorrhœa, post-partum hæmorrhage, tetanus, as an antidote to chloroform, to ward off epileptic attacks, and for the spasm of false croup and whooping-cough, and in cocaine and strychnine poisoning. Is largely employed in threatened fainting and collapse, and as a restorative after gas in dental extractions.

As the substance so rapidly volatilises it is desirable to make use of the hermetically sealed glass capsules mentioned below. One or two Public Institutions recommend a drop bottle in place of these; the patients receiving Amyl Nitrite in this condition may be saving a slight additional pecuniary outlay, but they will obtain no relief from the liquid after the bottle has been opened again and again to procure the "drops"—the substance will be inert.

Capsules of Amyl Nitrite.

Encased in cotton wool and silk; 1, 2, 3, 4, 5, 6, or 10 minims.

In use the glass capsule is broken, the liquid soaks the cotton wool and silk cover, and can be inhaled most conveniently. For practical purposes the 3-minim size meets all wants.

Mistura Amyl Nitritis.

Amyl Nitrite 2, Alcohol (90 per cent.) 16. Mix and add to Powdered Tragacanth 1 (contained in a dry phial). Then add gradually Distilled Water, to 240. Shake well. *Dose.*—1 or 2 drachms (3·5 to 7 Cc.); is useful against sea-sickness.

In chloroform syncope, Amyl Nitrite affords the quickest means of restoring the heart's action; and the capsules are the most convenient form of using it.

For the treatment of angina pectoris 5 drops inhaled; the physiological action occurs in 30 to 60 seconds.

In ague, on the onset of the cold stage, 5 minims inhaled cuts short the attack and checks the recurrence of the paroxysms.

As an antidote to chloroform 3 minims inhaled.—L. ii./91,463; B.M.J. ii./88,179.

Is very useful in sea-sickness, 3 drops (from a glass capsule) should be inhaled and repeated every 2 or 3 hours if necessary.

In post-partum hæmorrhage, 5 minims inhaled will restore patient from collapse.

To restore animation a dose should be given in doubtful cases of death, either from drowning, hanging, or fainting.

In tetanus inhale a dose in every spasmodic seizure to gain time.—L. i./98,103.

Infantile convulsions are well treated by inhalation from 1 minim capsules.—Clinical Jl. Dec. 3, 1902.

Is a powerful agent to relax uterine spasms and hourglass contraction, whether natural or caused by ergot.

In uræmic asthma, Nitrite of Amyl capsules found useful.—B.M.J. i./83,811,956,1064,1115.

In puerperal eclampsia, excretion of uric acid largely increased under its use.—Pr. xxxiv.50.

Successful use in epilepsy, controlling the fits and preventing insensibility.—B.M.J. ii./89,599,688.

The best remedy in angina pectoris; patient's mind relieved by small doses of morphine, combined with the nitrite.—L. i./90, 240. Amyl nitrite and nitroglycerin the best remedies for angina.—Pr. xlvi.253; M.C. May 1891,132.

Should be always kept at hand by angina patients.—L. i./98,837; B.M.J. i./98,808.

Research on composition; commercial amyl nitrite shown to contain an *α*- and a *β*-amyl nitrite, as well as **Isobutyl Nitrite.** This, when pure, is found prompt in action on blood-pressure, pulse-rate, and respiration, and may be used as a substitute for amyl nitrite for inhalation.—P.J. 1888,485; B.M.J. ii./88,1407; Y.B. 1890,308; Pr. xlvii.259.

Capsules of Isobutyl Nitrite. Encased in cotton wool and silk, contain 3 minims, and are used for the relief of spasmodic affections.

AMYLENI HYDRAS. P.G.

Syn. DIMETHYL-ETHYL CARBINOL. *Dose.*—30 to 80 minims (1·8 to 4·7 Cc.), flavoured with liquorice.

A colourless liquid, of pungent taste and odour, resembling a mixture of paraldehyde and camphor. Soluble in 8 parts of water, also in alcohol. Sp. gr. 0·815 to 0·820, boiling point 216°F. It is a hypnotic, occupying an intermediate position between chloral and paraldehyde.

Capsules contain 10 minims in each. *Dose.*—3 to 6.

Amylene-Chloral.—*Syn.* DORMIOL; DIMETHYL-ETHYLCARBINOL-CHLORAL.

Dose.—5 to 50 minims (0·3 to 3 Cc.).

Produced by the action of amylene hydrate on chloral.

Is an oily liquid with amylene odour and burning taste, has strong hypnotic properties, without unpleasant after-effects, even in mania. A 50 per cent. solution is supplied commercially; best administered in a 2 ounce draught with syrup or liquid extract of liquorice.—P.J. ii./99,135.

In suitable cases a peaceful sleep of 4 to 7 hours follows its use.

Melancholia and hypochondriasis, useful in.—B.M.J.E. ii./00,19. As a sedative.—L. i./02,1711; B.M.J.E. ii./02,4.

Capsules contain 7½ minims (0·5 Gm.) pure Dormiol.

ANTIMONII CHLORIDUM.

Syn. ANTIMONY TRICHLORIDE.

When pure is in colourless crystals, or translucent crystalline masses, known as butter of antimony. It is very corrosive; on addition to water, it decomposes into free hydrochloric acid and basic antimony oxychloride, powder of Algaroth.

Liquor Antimonii Chloridi.

A heavy caustic liquid of a yellowish red colour; Sp. Gr. 1·47. It is coloured by impurity, ferric chloride often added intentionally. It can be obtained colourless. Antimony chloride is a useful caustic and desiccating escharotic, does not cause much pain.

APIOL.

Dose.—3 to 6 minims (0·18 to 0·35 Cc.), in **Perles**, 3 minims in each, or **Capsules** 3, 5, and 10 minims.

A liquid preparation obtained from, and containing the active properties of, the fruit of *Apium Petroselinum*, common parsley. It is usually a transparent green fluid, but is also met with as a dark oily liquid, with a peculiar odour and a pungent taste like parsley, which is not miscible with water, but dissolves readily in alcohol and æther.

It has decided efficacy in primary amenorrhœa or deficiency of secretion, as well as in accidental suppression and in dysmenorrhœa. A perle should be given night and morning for 4 or 5 days during the epoch.

Apioline Capsules are of French manufacture—are advocated for regulating and relieving difficult and painful menstruation.

Apiol, Crystallised.

A stearoptene in light, colourless, acicular crystals, only slightly soluble in water, but soluble in ether, alcohol, and oils. Has been employed as a substitute for quinine in malaria and in dysmenorrhœa. For amenorrhœa a sterilised solution in olive oil containing 3 grains (0·2 Gm.) in 17 minims (1 Cc.) has been given—injected once daily for some days before the period.—M. 1901,42.

Capsules of Apiol and Ergotin.

Contain Apiol 5 minims (0·3 Cc.) and Ergotin 2 grains (0·13 Gm.).

Ergoapiol. · Under this name capsules are supplied for the relief of amenorrhœa and dysmenorrhœa and allied troubles.

APOCYNUM, U.S.

American Indian Hemp Root.—*Syn.* Apocynum Cannabinum, Canadian Hemp.

Dose of root in powder.—1 to 20 grains (0·065 to 1·3 Gm.).

Tinctura Apocyni. 1 in 10 of proof spirit.

Dose.—5 to 60 minims (0·3 to 3·5 Cc.).

American Indian Hemp is a powerful emetic and diaphoretic in large doses; it also acts as a cathartic, anthelmintic, and diuretic, and is useful in dropsy and Bright's disease.

It is considered a good diuretic and hydragogue cathartic, a small quantity produces diuresis, emesis, or catharsis; it has an agreeable aromatic taste and also possesses tonic properties. Uræmia is warded off by the profuse diuresis it produces and it is very valuable in removing pleuritic effusion.

Useful in dilatation of heart and valvular lesions. Renders pulse slower and fuller. — L. i./94,841; i./96,1375; B.M.J.E. i./96,296; P.J. ii./95,551.

Valuable as a diuretic for cases of anasarca.—B.M.J. ii./97,1714.

APOMORPHINÆ HYDROCHLORIDUM.

Apomorphine Hydrochloride (*Off.*).

Dose.—$\frac{1}{32}$ to $\frac{1}{16}$ grain (0·002 to 0·004 Gm.), increased, as an expectorant; $\frac{1}{12}$ to $\frac{1}{4}$ grain (0·0054 to 0·016 Gm.) as an emetic; $\frac{1}{25}$ to $\frac{1}{6}$ grain (0·0026 to 0·01 Gm.) hypodermically.

A derivative of morphine or codeine obtained by heating them with an excess of hydrochloric acid in sealed tubes. Apomorphine is morphine deprived of a molecule of water. In commerce the hydrochloride occurs in minute pale greyish-white, acicular crystals, soluble 1 in 50 of water; the solution turns emerald-green in colour, but loses little of its medicinal powers. This discoloration is said to be due to the action of free ammonia in the air. Insoluble in ether and chloroform.

It acts as a non-irritant emetic and powerful anti-stimulant; in bronchial asthma doses of $\frac{1}{6}$ grain are very useful. Small doses are expectorant and relieve bronchitis. May be given as

Tabellæ Apomorphinæ, $\frac{1}{50}$ grain (0·0013 Gm.) in each, combined with chocolate. G. H. contain $\frac{1}{30}$ grain.

Tablets, Compressed, contain $\frac{1}{50}$ and $\frac{1}{100}$ grain.

Injectio Apomorphinæ Hypodermica. (*Off.*).

Apomorphine Hydrochloride 1, Diluted Hydrochloric Acid 1, Distilled Water to 100. *Dose.*—5 to 10 minims (or more) as an emetic. The addition of a trace of acid keeps it stable and colourless. This solution may be used for dispensing.

This injection is a useful hypnotic for epileptics; and for cases of puerperal convulsions it soon causes vomiting and free perspiration, patient falls asleep and awakes quiet.

Hypodermic Tablets are prepared containing $\frac{1}{20}$, $\frac{1}{15}$ and $\frac{1}{10}$ grain in each.

Mistura Apomorphinæ et Terebeni, G.H.

Dose.—1 ounce. Apomorphine Hydrochloride $\frac{1}{19}$ grain, Terebene 15 minims, Balsam of Peru 10 minims, Mucilage Mixture* to 1 ounce.

Syrupus Apomorphinæ Hydrochloridi, B.P.C. Apomorphine Hydrochloride 5 grains, Diluted Hydrochloric Acid 15 minims, Rectified Spirit 7 drachms, Distilled Water 7 drachms, Syrup to 20 ounces.

Dose.—$\frac{1}{2}$ to 1 drachm (1·8 to 3·5 Cc.).

Apomorphine invariably produces vomiting by a single dose, $\frac{1}{5}$ grain by the mouth or $\frac{1}{10}$-grain hypodermically. The vomiting seems to put an end to itself; there is no subsequent nausea, nor is it followed or accompanied by any ill effects.

Is of great value as an emetic in all cases of poisoning.

In a case of obstruction of the œsophagus by a plumstone, the injection of apomorphine hypodermically caused vomiting and its removal.

As an expectorant $\frac{1}{20}$ grain every 2 hours is useful, or, given with the same quantity of morphine every 2 or 4 hours, it lessens cough and increases fluidity of sputa.

In pertussis is given with good effect, combined with morphine.

Hypnotic effects from sub-cutaneous injection of $\frac{1}{30}$ grain.—B.M.J.E. ii./00,63.

As a hypnotic, most effective. Hypodermic dose—$\frac{1}{30}$ grain, repeated in half-an-hour if first injection should fail. Not more than $\frac{1}{10}$ grain should be given in hysteria, insomnia and neuralgias.—Therap. 1900,202.

In alcoholism it acts as a sedative and does not cause vomiting.—L. i./00,1481,1635; B.M.J. ii./00,1375.

Apocodeinæ Hydrochloridum. *Dose.*—$\frac{1}{10}$, gradually increased to 1 grain (0·0065 to 0·065 Gm.).

A pale brown microcrystalline (?) or amorphous greyish powder freely soluble in water.

A good expectorant hypodermically. Solution must be neutral; dose up to 25 minims of 2 per cent. solution. Internally, 10 to 30 minims of 1 per cent. solution caused no nausea or vomiting, but produced free expectoration. In pill 3 or 4 grains daily may be safely given.—B.M.J. i./91,455; P.J. 1891,878; M.C. June 1891,213.

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* **Mistura Mucilaginosa, G.H.** Mucilage of Gum Acacia 2 drachms, Syrup 30 minims, Water to 1 ounce.

Is a sialagogue, and increases peristalsis; is not emetic, but is a sedative suitable for children.—Lyon Médicale, 1893, xxi.69; xxiii.145.

As **Hypodermic Purgative**.

A dose of 30 minims (1·8 Cc.), of a 1 per cent. solution produced purgation in half-an-hour without vomiting.—B M.J. ii./02, 1247. This and Colocynthin (*p.*219) on a recent trial however acted as emetics.—Gowers.

ARGENTUM.

Silver Leaf, Sterilised.

Is employed for placing over wounds to assist their healing beneath plain sterilised or medicated Gauze.—B.M.J. i./04,541; it is also used for coating pills *v.p.*414.

Argenti Acetas.

In white crystals, freely soluble in water. A 1 per cent. solution has been suggested in place of silver nitrate for infantile suppuration of the conjunctivæ of the eyes, as being not so irritant. Dilute Sodium Chloride Lotion may be used after it.—M. 1901,44.

Argenti Citras, Silver Citrate.—*Syn.* ITROL.

A white, odourless non-caustic powder, soluble about 1 in 4,000 of water. Is recommended in Crédé's treatment as an antiseptic for wounds, in lotion, ointment, or powder.—P.J. i./96,243; Pr. lx. 292.

Argenti Fluoridum, *Syn.* **Tachiol.**

This salt is soluble 1 in less than 2 of water, and about 1 in 3 of alcohol 90 per cent. It is a powerful non-toxic bactericide. For general surgical purposes solutions are employed of strength 1 in 100 to 1 in 1,000. The most resistant pyogenic organisms are said to be killed in less than a minute by a solution as dilute as 1 in 150,000. 1 in 200,000 solution was fatal to *B. typhi abdominalis* in the same time. The substance coagulates albuminoids only slightly.—P.J. ii./02, 273; L. i./02, 393; ii./02, 1707.

It blackens linen with which it comes in contact. In cystitis, urethritis, and similar affections the strength of the solution may be 1 in 5,000 or 1 in 1,000, as a slight caustic may be increased to 1 in 100.

Argenti Lactas. Silver Lactate. *Syn.* ACTOL.

A whitish odourless powder soluble 1 in 160 of water, recommended in solution 1 in 200 to 1,000 as an antiseptic for surgical use and for rendering aseptic ligatures and drainage tubes. Is slightly soluble in alcohol 90 per cent. Being more soluble is more irritating than silver citrate. Statements appear to the effect that this salt is soluble 1 in 15 of water, but our experiments do not confirm this.

For gonorrhœa.—B.M.J.E. i./99,99.

For chronic abscesses at the roots of the teeth fresh hypodermic injections of Actol 1 : 500.—P.J. ii./00,703.

Argenti Nitras. (*Off.*).—*Syn.* LUNAR CAUSTIC.

Dose.—¼ to ½ grain (0·016 to 0·032 Gm.) in a pill, best with kaolin ointment as an excipient—*not* with bread crumb,—this contains common salt, which decomposes it.

Pilula Argenti Nitratis et Morphinæ Acetatis. Crocq's Pill contains ⅙ grain of each salt, made with the above mass.

Silver Nitrate is soluble 1 in 0·53 of water (P.J. ii./03, 881), and slightly so in alcohol.

Pigments, containing from 10 to 60 grains to the ounce of water are used for the throat, and applied to ulcers as a stimulant. Lotions, eye-drops and solutions for injections into the urethra vary from 1 in 1,000 to 1 in 100 in strength.

Crédé recommended that a drop of a 2 per cent. solution should be dropped into the eyes at birth to avoid risk of purulent ophthalmia.

Injections of weak solution into the bladder useful in cystitis.—B.M.J.E. ii./92,38.

Gonorrhœa treated by solution of nitrate of silver (10 grains to the ounce), applied on a mop of cotton wool to the inflamed part of urethra through an endoscopic tube.—L.i./92,461. Cocaine nitrate may be added.

Antidote to Silver Nitrate—common salt given in some demulcent drink. Salt is also used to arrest its action locally as a caustic. The pain caused by application of solutions of silver nitrate may be alleviated by previous application of a solution of cocaine nitrate, the hydrochloride being incompatible with it.

Mitigated Silver Nitrate is prepared of various strengths by fusing together silver nitrate 1 to 1 (P.Jap.), 1 to 2, or 1 to 3 of potassium nitrate, for the use of oculists and surgeons.

The fused mixture of 1 part with 2 of potassium nitrate is official as **Mitigated Caustic,** or

Argenti Nitras Mitigatus (*Off.*).

Argenti Nitras Induratus, Toughened Caustic (*Off.*).

Consists of silver nitrate with 5 per cent. of potassium nitrate added to it before fusing and moulding it into caustic points.

Argentic Hair Dye (Black or Brown).

No. 1 Solution.—Silver Nitrate 1, Distilled Water to 12.

No. 2 Solution.—Sulphurated Potash 1, Distilled Water to 8. After washing and drying the hair, the solutions to be applied separately, in above order, and after 2 minutes the hair well washed with rain water. This dyes black, but lighter shades may be obtained by using a weaker strength of No. 1 solution which should not be allowed to touch the skin.

Black Dye.

No. 1 Solution.—Pyrogallic acid 1, Alcohol (90 per cent.) 8, Distilled Water 40. Apply before No. 2.

No. 2 Solution.—Silver Nitrate 1, Strong Solution of Ammonia 1, Distilled Water to 8. Use as last recipe.

Ophthalmic Discs of Silver Nitrate contain $\frac{1}{500}$ grain in each combined with gelatin.

Pigmentum Argenti Nitratis Æthereum, L.H.

Silver Nitrate 20 grains, Distilled Water 1 drachm, Spirit of Nitrous Ether to 1 ounce, and **Causticum Argenti Nitratis.** St. J's. H. Silver Nitrate 1, Spirit of Nitrous Ether 7. Are caustic even when painted on a greasy skin.

Eczema of the flexures has been well treated by a pigment of strength 10 grains to the ounce.

Argenti Oxidum (*Off.*).

Dose.—½ to 2 grains in a pill with kaolin ointment.

Is not so caustic in action as silver nitrate. Continued administration may discolour the skin. It readily yields its oxygen, and will explode (if mixed) with such bodies as phenol and creosote.

Argentamine. ETHYLENE-DIAMINE-SILVER PHOSPHATE.

A solution of silver phosphate in ethylene-diamine solution, corresponding in strength of silver to a 10 per cent. solution of the nitrate. A colourless alkaline liquid, antiseptic and germicide, without the styptic effect of silver nitrate. Is recommended in injections for gonorrhœa, used in 1 in 2,000–4,000 solution.—B.M.J.E. ii./95,20.

In blenorrhœa neonatorum the upturned eyelids should be painted with 5 to 10 per cent. solution. Dilute Potassium Permanganate, or Boric Acid solutions should be used in addition to remove secretion.—M. 1901, 43.

Alternate use of Argentamine and Hydrogen Peroxide solution in gonorrhœa.—Therap. 1900,12.

Argentol.—*Syn.* ARGENTIC QUINASEPTOL.

An antiseptic and hæmostatic with deodorant properties, promotes granulation.

Argonin.

A compound of silver nitrate and casein-soda, in white powder, slightly soluble in water. It is antiseptic and not so caustic as silver nitrate. Solutions 1 or 2 per cent. recommended for injection in gonorrhœa, and 3 per cent. solutions are used in ophthalmic practice.

Solubility of Argonin, Airol and Protargol increased and decomposition prevented by addition of glycerin, in making aqueous solutions in the cold.—P.J. i./00,364.

Argyrol.—*Syn.* VITELLIN.

A silver salt containing 30 per cent. of metallic silver, combined with a proteid obtained from wheat It is extremely soluble, as 1 oz. of it is freely taken up by less than a dessert spoonful of water, but insoluble in alcohol 90 per cent. Strong solutions do not irritate mucous membranes. Good results have been obtained in diseases of the eye and genito-urinary tract. 10 to 30 per cent. solutions have been used with good results in acute rhinitis, of the ordinary "cold-in-the-head' variety, after preliminary treatment with 1 in 3,000 adrenalin solution. In chronic catarrh of the larynx also useful, same strength. 50 per cent. solution ha been employed in a few cases of acute purulent otiti media with satisfactory results. A 25 per cent. solution may be freely instilled in purulent conjunctivitis; fo injections in acute gonorrhœa 2 to 5 per cent. is sufficiently strong. In cystitis 1 oz. of 20 per cent. solution may be injected, allowing it to remain in the bladder.—L. ii./03,1716. Is incompatible with Cocaine Hydrochloride and other alkaloids.

A 50 per cent. solution has also given good results in tertiary syphilitic lesions of the mucous membrane of the tongue, mouth and nose.

'Sterules' of Argyrol Solution (*v.p.*487), 10 and 25 per cent. strength are prepared.

Collargol, Colloid Silver. — *Syn.* ARGENTUM COLLOIDALE, ARGENTUM CRÉDÉ.

Dose.—⅜ to 2 grains (**0·025 to 0·15 Gm.**) in pills or solution.

To prepare—dissolve Citric Acid 300 in water 2,000, and neutralise with Ammonia. Mix with this a solution of Ferrous Ammonium Sulphate 558 in water 2,000, and add in small quantities at a time Silver Nitrate 60, dissolved in water 600, with constant stirring. Allow to deposit in the dark. Collect, wash and dry precipitate between 40° and 50° C.—Y.B.P. 1903,275.

In black shining scales, soluble 1 in 25 of water. Used as a bactericide, 1 in 100 to 10,000 in equal parts of glycerin and white of egg or aqueous Solution.

Internally has been used for gastric and intestinal catarrh. Antiseptic uses.—B.M.J.E. i./03,23.

German physicians have proposed intravenous injections of a ½ to 1 per cent. solution for septic affections such as endocarditis.

Unguentum Crédé. Collargol 15, Adeps Benzoata 75, Cera Alba 10.

For eczema, syphilis, and gonorrhœa, and as a prophylactic to gonorrhœal ophthalmia.—B.M.J.E. ii./01,16; Pr. lxx.453.

Ichthargan. Silver Thio-hydrocarburo-sulphonate.

A powerfully antiseptic odourless brown powder containing 20 per cent. silver, soluble in water and glycerin. Forms a non-transparent liquid with twice its weight of water, which clears on further addition. It is soluble 1 in 20 of alcohol 90 per cent. Claimed to be of considerable value in ophthalmia and urinary diseases, 1 to 3 per cent. solutions brushed on in trachoma. From 1 to 3,000 up to 1 in 500 solutions ar used for injection in gonorrhœa; 4 per cent. for nos and throat in glycerin or water.—P.J. ii./00,371 ; i./01,138.

Largin.

A silver-albumen compound containing 11·10 per cent of silver. Dissolves in water to the extent of 10·5 per cent. and is also freely soluble in glycerin, blood serum and solutions of peptone. It is used as an anti-gonorrhoic and a 1 in 4,000 solution has been found to destroy gonococci in about five minutes, and all bacteria in ten minutes.—P.J. ii./98,435; i./00,413.

Largin useful in 10 per cent. Solution in acut contagious ophthalmia.—Therap. 1900,115.

Eye diseases, of great use for.—B.M.J. i./00,622.

Ophthalmic blenorrhœa relieved.—B.M.J.E. i./00,68.

Protargol.

A proteid compound, containing 8 per cent. of silver easily soluble in water. Useful in gonorrhœa as a painless bactericide.—L. i./98,872; Pr. lx. 310; B.M.J.E i./98,40. For middle ear disease.—Pr. lxvi. 449.

For conjunctivitis.—B.M.J.E. ii./98,40.

Solutions ¼ to 1 per cent. (or stronger up to 10 an 40 per cent.) for ophthalmic use, and from 4 to 20 pe cent. for wounds and ulcers, urethral injection ½, 1, 5 and 10 per cent. are prepared by rubbing the powde into a paste with water and diluting as required wit cold or lukewarm (not hot) water. Is found to stai the conjunctiva to some extent. Ointments 5 to 1 per cent.

Protargol in purulent affections of the eye an lachrymal sac.—Therap. 1899,271.

Liquor Protargol, R.O.H. 10 to 40 in 100 Useful in various forms of Ophthalmia.

'Collapsubes' of Protargol Ointment of paraffi basis, 2 per cent. and stronger as required (*v.p.* 217) with catheter attachment are prepared for urethra medication in gonorrhœa.

'Sterules' (*v.p.* 487) of 10 and 25 per cent. solutions are prepared.

'Solubes' contain 4·4 grains for preparing an ounc of 1 per cent. solution of Protargol.

Albargin.

Another similar non-irritant silver compound. Contains 15 per cent. of silver, and is of sand-like appearance. Freely soluble in water (about 1 in 2), and soluble in alcohol 90 per cent. about 1 in 130. For gonorrhœa a 0·2 per cent. solution is injected 4 or 5 times daily.—M. 1901,40.

ARSENIUM.

Acidum Arseniosum (*Off.*). *Syn.* ARSENIC; WHITE ARSENIC (ARSENIOUS ACID, B.P.1885).

Dose.—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·0043 Gm.).

Arsenious anhydride, obtained by roasting arsenical ores, occurs in heavy lumps or white powder.

In the crystalline condition is soluble 1 in 71 of water at 61° F., or amorphous 1 in 63. The solubility in weak Hydrochloric Acid solution is not appreciably greater.—P.J. i./02,511,552. Is also soluble in about 5 of Glycerin.

It is given internally as a general tonic and nerve tonic and in diabetes and anæmia, for chronic skin diseases, and in association with iron, which it appears to render more easily assimilated. It is said to increase respiratory power and to improve the complexion. All preparations of arsenic should be given after food. Externally it has a caustic action and is put into the cavities of carious teeth to kill the nerves. In Austria arsenic has been added to the diet of the Styrian mountaineers under the belief that it improves their capacity for breathing.

Arsenical poisoning in beer drinkers. — B.M.J. ./01,397; samples of beer analysed have been found to contain from $\frac{1}{2}$ to 3 grains per gallon. — B.M.J. i./01,1047.

Dermatitis has been caused by arsenic contained in a lye used for colouring stockings. —L. i./01,1199.

Of 1,173 samples of beer wort examined in the Government laboratory, the majority were quite free from poison. Hydrogen is produced electrolytically for esting.—L. ii./03,547.

Notes on the Report of the Royal Commission on Arsenical Poisoning in Food and Drink.—B.M.J. i./03,1557,1610; L. ii./03,1674.

Arsenic may be removed from Hydrochloric Acid by warming with pure fine copper gauze and subsequent distillation.—Y.B.P. 1902,36.

Bettendorf's Reagent for arsenic is a concentrated solution of stannous chloride in hydrochloric acid. A colourless arsenical solution will deposit brown metallic arsenic in the cold or on warming.

Gutzeit's Test. The substance to be examined is placed in a test tube with some arsenic-free zinc, and sulphuric acid. The tube is plugged with cotton wool, and covered with filter paper having a spot of silver nitrate solution. A yellowish stain resulting in a few minutes indicates presence of arsenic. A control with lead acetate paper should be conducted to obviate confusion with sulphur.

A modification of the test consists in employing alkali instead of acid for generating the hydrogen and using a spot of mercuric chloride as in the B.P. Test for arsenic in glycerin.

Marsh's Test consists in generating hydrogen by means of pure acid and zinc, and to these is added the substance to be tested. If arsenic be present arseniuretted hydrogen is evolved, which deposits metallic arsenic in the cooler parts of the delivery tube, which is heated at several points by aid of Bunsen burners.

Certain moulds, notably *penicillium brevicaule*, have the power of decomposing arsenites with the evolution of arseniuretted hydrogen. The characteristic garlic-like odour of this gas enables the detection of 1 of arsenic in 10,000 parts of beer; this is, however, not as delicate as chemical tests.—L. ii./03,22.

Tablets of **Arsenious Acid** contain $\frac{1}{100}$, $\frac{1}{50}$ and $\frac{1}{20}$ grain.

Antidotum Arsenici, Antidote to Arsenic. P.Dan. and others. U.S., P.G.ii., P.Helv. and P.Jap. use Ferric Sulphate.

Ferric Chloride 3 (or Strong Solution of Ferric Chloride B.P. 3), Water 17. When required for use, add this solution to Calcined Magnesia 1, previously mixed with Water 19, and shake well. Should be freshly prepared, and given in doses of a tablespoonful every 5 or 10 minutes, until the symptoms are relieved. Ferric Hydrate should be administered in at least 12 times the quantity of the Arsenic supposed to have been swallowed. The Antidote contains about 2½ per cent. of the hydrate.

Liquor Arsenicalis, Fowler's Solution (*Off.*).

Syn. LIQUOR POTASSÆ ARSENITIS.

Dose.—2 to 8 minims (0·12 to 0·48 Cc.). Contains 1 per cent. of arsenious anhydride as proposed by C.U.D.

Valuable in chorea; should be given to limit of toleration.—L. ii./92,19,909; B.M.J. i./02,961.

Of great value in diabetes, after sugar reduced by dieting and codeine. Should be given regularly for at least 3 months, restrictions in diet being gradually removed. Also in asthma, especially in that of children and old emphysematous people.—L. i./93,407.

Liquor Arsenici Cinnamylicus cum Opio (Hoff.).

Dose.—6 drops, increased, twice a day after meals.

Arsenious Anhydride 1, Potassium Carbonate 2, Cinnamic Acid 3, Distilled Water 5, heat to dissolve. Add Cognac 25, Extract of Opium 3, dissolved in Distilled Water 25. Filter, and wash filter with more water to produce 100. Used as a phthisis cure; is the same strength as **Liquor Arsenicalis** in arsenic and about one-fifth weaker in opium than tincture of opium.

Liquor Arsenici Hydrochloricus (*Off.*).

Dose.—2 to 8 minims (0·12 to 0·48 Cc.) Contains 1 per cent. of arsenious anhydride. Is compatible with acid mixtures.

De Valangin's Mineral Solvent was one-third the strength of the above.

Arsenii Bromidum.

Dose.—$\frac{1}{60}$ to $\frac{1}{12}$ (0·001 to 0·0054 Gm.).

In yellowish white deliquescent crystals, soluble in water. Is recommended for diabetes and epilepsy.

Liquor Arsenici Bromatus. *Syn.* CLEMENS' SOLUTION OF ARSENITE OF BROMINE.

Dose.—1 to 5 minims (0·06 to 0·3 Cc.), once or twice a day.

Potassium Carbonate 1, Arsenious Anhydride in powder 1, Distilled Water 80. Boil until dissolved. When cooled, add Bromine (by weight) 2, and Distilled Water, *q.s.* to 100. Heat until decolorised. A solution of potassium arsenate and bromide is formed. Is useful in epilepsy and diabetes with careful diet.

Pilula Arsenicalis.

Arsenious anhydride should be well and carefully triturated with milk sugar before any liquid excipient is added. Those containing $\frac{1}{20}$, $\frac{1}{30}$, $\frac{1}{50}$, $\frac{1}{100}$, and $\frac{1}{120}$ grain are generally kept made.

Granula Dioscoridis. (P. Dan. and Codex).

Contains 1 milligramme Arsenious Anhydride, with

Milk Sugar and Manna, of each 0·02 gramme. *Dose.*—1 to 5.

Pilula Arsenicalis et Strychninæ contain $\frac{1}{50}$ grain (0·0013 Gm.) of each.

Pilula Asiatica. (Codex.) *Dose.*—1 or 2 daily.

Arsenious Anhydride, $\frac{1}{13}$ grain (0·005 Gm.), Black Pepper $\frac{3}{4}$ grain (0·05 Gm.), Gum Acacia *q.s.*

To increase the tonic effect of arsenic it is often combined with iron, as in

Pilula Ferri Arsenicalis. *Dose.*—1, 3 times a day.

Arsenious Anhydride, in fine powder $\frac{1}{60}$, Exsiccated Ferrous Sulphate 3, Syrup $\frac{1}{2}$; in grains, for one pill; in grammes, for fifteen.

The combination of arsenic and sulphate of iron the most efficacious treatment in chlorosis and anæmia.—L. i./93,404.

Pilula Ferri Arsenicalis cum Strychnina is the same with Strychnine Hydrochloride $\frac{1}{60}$ grain in each.

Tablets, of Arsenious Acid $\frac{1}{64}$ grain and Blaud's Pill 4 grains. *Dose.*—1 to 4.

Tablets of Arsenic, Iron and Quinine contain Arsenious Acid $\frac{1}{60}$ grain, Ferric Hypophosphite 2 grains, Quinine Acid Sulphate 1 grain.

Pasta Arsenicalis. Arsenical Paste. For dental caries to destroy the nerve, after use, plug with Chloroform and Mastiche; this should be used with caution as it is very *poisonous.*

Arsenious Anhydride, levigated, 30, Plaster of Paris 15, Morphine Sulphate, 20, Cocaine 5. Mix and add Oil of Cloves 5, Phenol 25.

Pulvis Arsenici Escharoticus. Arsenical Powder (Cazenave). Arsenious Anhydride, levigated 1, Mercuric Sulphide (Cinnabar) 5, Animal Charcoal 1. Used as a caustic, formed into a paste with water.

Pigment of Arsenious Acid 1, Alcohol Absolute 75, and Water 75 applied to cancerous sores destroys the diseased parts.—B.M.J.E. ii./01,15; M.A. 1904,228.

Arsenii Iodidum, Arsenious Iodide (*Off.*).

Dose.—$\frac{1}{20}$ to $\frac{1}{5}$ grain (0·0032 to 0·013 Gm.), in a pill.

The two elements by direct combination form small orange-coloured crystals, readily and almost entirely soluble in water and in alcohol. Solution 1 per cent., 1 to 10 drop doses in milk, useful for lymphatic and scrofulous children, has marked iodine effect.

The content of AsI_3 may be estimated by titrating a weighed quantity in an aqueous Sodium Bicarbonate Solution with decinormal Iodine Solution.—P J. i./04,8.

Injectio Arsenii Iodidi Hypodermica.

Dose.—$\frac{1}{100}$ grain (0.00065 Gm.) in 6 minims (0·35 Cc.) of sterile water.

The strength may be increased if desired.

Liquor Arsenii et Hydrargyri Iodidi (*Off.*).

Syn. Donovan's Solution.

Contains Arsenious Iodide and Mercuric Iodide, of each 1 per cent. *Dose.*—5 to 20 minims (0·3 to 1·2 Cc.).

Given for syphilitic skin diseases.

Pilula Arsenii et Hydrargyri Iodidi contains $\frac{1}{12}$ grain (0·005 Gm.) of each salt = $9\frac{1}{6}$ minims of the above solution. *Dose.*—1 or 2, *v.p.*286.

Cupri Arsenis. Pure Scheele's Green.

Dose.—$\frac{1}{100}$ to $\frac{1}{25}$ grain (0·00065 to 0·0026 Gm.).

A pale green amorphous powder, recommended for various intestinal affections, cholera morbus, cholera infantum, diarrhœa, dysentery, and typhoid. Dose for adults, $\frac{1}{5000}$ to $\frac{1}{3000}$ grain every 10 minutes for an hour, then hourly; for children, half this quantity. Small repeated doses essential. For chlorosis and functional anæmia, $\frac{1}{50}$ to $\frac{1}{25}$ grain thrice daily successful.—Ed. M.J. 1890,550; P.J. 1890,247; B.M.J.E. ii./90,48; i./91,27; i./92,48.

Acidum Arsenicum. — *Syn.* **Ortho-Arsenic Acid.**

Dose—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·0043 Gm.). A crystalline powder soluble about 1 in 140 of water, and about 1 in 350 of Alcohol 90 per cent. The following salts are in use:—

Ferri Arsenas (*Off.*). *Dose.*—$\frac{1}{16}$ to $\frac{1}{4}$ grain (0·004 to 0·016 Gm.) in a pill.

This is an amorphous greenish powder and consists of Ferrous Arsenate (not less than 10 per cent.) with Ferric Arsenate and Iron Oxide.

Useful in night-sweats.—L. ii./94,1023.

Tablets contain $\frac{1}{8}$ grain (0·008 Gm.).

Quininæ Arsenas, *v.p.*435.

Sodii Arsenas (*Off.*). *Dose.*—$\frac{1}{40}$ to $\frac{1}{10}$ grain (0·0016 to 0·0065 Gm.)

Sodium Arsenate crystallises with either 7 or 12 molecules of water and is efflorescent as well, the proportion of arsenic it contains is therefore uncertain. It is now official in the anhydrous state, in white powder, dried at 300° F., containing 61·8 per cent. of As_2O_5.

Should be crystallised salt containing 36·85 per cent. of arsenic acid.—C.U.D. In other pharmacopœias the crystallised salt is official so unification is certainly necessary.—B.M.J. i./03,29.

Pilula Sodii Arsenatis, $\frac{1}{32}$ and $\frac{1}{64}$ grain. Soluble 1 in 6 of water.

Injectio Sodii Arsenatis et Ferri.—ZAMBELETTI'S FLUID is similar.

Dose.—5 to 10 minims (0·3 to 0·6 Cc.), hypodermically.

Sodium Arsenate 0·1 gramme, Iron and Ammonium Citrate 0·8 gramme, Aqua Laurocerasi 20 grammes.

Has been employed with much advantage, particularly in Italy, in leucocythemia.

Liquor Sodii Arsenatis (*Off.*).

Dose.—2 to 8 minims (0·12 to 0·48 Cc.). 1 per cent. Is about ten times the strength of Pearson's Solution of Arsenic (Codex), which is much used on the Continent; the latter contains 1 of crystallised arsenate in 600 of water.

Arsenical Cigarettes are made of paper impregnated with sodium arsenate, so that each contains ¾ grain (0·05 gramme) of the salt. The patient ought to inspire the fumes deeply three or four times.

Acidum Cacodylicum. Cacodylic Acid.

Has recently been much employed in medicine, particularly in France. It is the ultimate product of oxidation of arsenium-dimethyl (cacodyle), and of cacodyle oxide. It occurs in the form of small colourless deliquescent crystals, and although containing 54·4 per cent. arsenium, equivalent to 71·4 per cent. arsenious acid, it is relatively non-toxic. The following compounds are used:—

Ferric Cacodylate. *Dose.*—¾ to 5 grains (0·05 to 0·32 Gm.) *per os* per diem, or ½ to 1½ grains (0·03 to 0·1 Gm.) hypodermically per diem.

In yellowish-white powder, used for anæmia and chlorosis.—P.J. ii./00,486.

Guaiacol Cacodylate.—*Syn.* CACODYLIACOL.

Dose.—½ to 2 grains (0·03 to 0·13 Gm.) *per os* or hypodermically in affected regions for tuberculosis.

In whitish granules with alliaceous odour combined with that of guaiacol.– P.J.i./00,246; C. & D.i./00,932.

Magnesii Cacodylas.

Dose.—¾ grain (0·05 Gm.) hypodermically, gradually increased. Its properties are similar to those of the sodium salt both chemically and therapeutically. *q.v.*

Solutio Hydrargyri Iodo-Cacodylatis. *Dose.* 15 minims.

This solution is prepared by dissolving Mercury Cacodylate 15 grains (1 Gm.) and Cacodylic Acid 30 grains (2 Gm.) in water 2½ ounces (75 Cc.). Separately Sodium Iodide 15 grains (1 Gm.) is dissolved in water 80 minims (4·7 Cc.) and this solution is added to the former. The mixture is then neutralised with dilute Soda Solution, and the volume made up to 3 ounces, 160 minims (100 Cc.). Of this solution 15 minims contain ½ grain (0·03 Gm.) Mercury-iodo-cacodylate (equivalent to $\frac{1}{10}$ grain Mercuric Iodide). This amount is injected on alternate days in the treatment of syphilis and may be increased if desired.—M.02,8.

Sodium Cacodylate.

Dose.—Average per rectum and hypodermically ½ to 1 grain (0·03 to 0·065 Gm.) *v.p.*100.

The salt contains 46·8 per cent. of arsenium, equivalent to 61·8 per cent. arsenious acid. That in commerce usually contains 18 to 25 per cent. of water. It frequently contains some uncombined cacodylic acid, and should therefore be carefully examined, and solutions of this deliquescent salt should be standardised.

Cancer improved by hypodermic injections.—L. i./01, 1462.

Arsenyl appears to be a similar preparation. *Dose.*—½ grain.

Elixir Sodii Cacodylatis (standardised).

Dose.—30 minims (equivalent to ½ grain of the salt).

Pills contain ½ grain (0·03 Gm.).

The following formula in grains will be found useful:—

Sodium Cacodylate 50, Benzoin 50, Liquorice

Powder 50, Acacia Powder 25, Alcohol 90 per cent. *q.s.* Divide into 100 pills.

Dose.—1, three or four times a day, but when given by the mouth or per rectum the drug may cause renal congestion with albuminuria and fall in the quantity of urine excreted, this Gautier has proved experimentally on himself.

Hypodermic Injection. A sterile preparation is made and standardised to contain 0·05 Gm. (¾ grain) of Cacodylic Acid in 1 Cc. (17 minims) an average dose once in 24 hours.

Intravenous Injection of the same strength as the hypodermic injection has been employed in phthisis. The dose of 17 minims has been given 1 to 4 times daily.—M. 01,84.

Glass Capsules (sterile) containing the average dose of this standardised injection are prepared and are convenient for use.

For tuberculosis Gautier employs ⅖ grain (0·025 Gm.) for the first injection. Double this amount is given the second day, this dosage being kept up for 7 days. Then follow 7 days or more in which the treatment is suspended, after which the dose is increased up to 1½ grains (0·1 Gm.) daily, and this is maintained unless there be signs of intolerance—stomach-ache, urticaria, tinnitus aurium, deafness, in which case the dose should be diminished to the lowest which is efficacious.

Gautier gives at the same time small doses of Potassium Iodide (0·05 Gm. per diem). He also gives Alkaline Phosphates and raw meat, and where the lung is the seat of the disease he gives inhalations of Carbon Disulphide—a few drops on cotton wool to be inhaled for a few minutes three or four times in 24 hours.—M. 01,33.

Rectal Injection. The dose is similar to that of the hypodermic method, but more dilute—½ to 1 grain in 1 to 4 drachms of water (conveniently prepared by diluting the contents of one of the capsules above.)

Sodium Cacodylate has been employed in tuberculosis, phthisis, and consumptive cases generally, in diabetes mellitus, exophthalmic goître, pernicious anæmia, cancer (particularly of the stomach), malaria, chorea, leprosy, psoriasis, and in all cases in which arsenic has been used.

The cure of tubercle is slow, and if fever be present it will only fall a few tenths of a degree per month. If there is loss of appetite this always returns after the third or fourth injection of a dose of 0·03 to 0·05 Gm. of the salt while the patient's weight and strength increase. On the whole the hypodermic method of administration — regularly every day for a week, resuming after a break of a week or so, and so on—may therefore be most advocated, though even this causes the patients to give off an alliaceous odour.—B.M.J. i./01,120; B.M.J.E. ii./99,15,64; B.M.J. i./01, 50; L. ii./99,1408; L. i./00,1446; P.J. ii./00,724; ii./02,336.

Should be used with caution.—B.M.J. ii./00,1823.

Chorea, good results in.—B.M.J.E. i./01,52.

Cacodylic preparations often fail to show the effects of arsenic.—L. i./02,749.

Cacodylates of use in mental disorders.—B.M.J.E. ii./01,31.

For chronic skin disorders Cacodylates well replace Arsenic.—B.M.J.E. ii./01,83.

Bunsen demonstrated non-toxicity 60 years ago.—L. i./03,474.

Arsycodile. A Sodium Cacodylate compound employed in skin affections, and in neurasthenia, malaria and diabetes. **Pills** contain 0·025 Gm. Sodium Cacodylate, and **Ampoules** for hypodermic use containing each 0·05 Gm. are supplied.

Arrhénal. Disodium Methylarsenate.

Dose.—⅖ to 3 grains (0.025 to 0·2 Gm.) *per os* or hypodermically.

This preparation has been called the "**New Cacodyle.**" It is prepared by the interaction of Methyl Iodide and Sodium Arsenate in presence of excess of Alkali. The compound contains 34·5 per cent. of Metalloid Arsenium, corresponding with 45·5 per cent. of Arsenious Acid. It is soluble in water to the extent of about 1 in 1, and about 1 in 150 of alcohol 90 per cent. It has been employed in tuberculosis, emphysema, ague, syphilis, and various skin affections. — L. i./02,623; B.M.J. i./02,804; B.M.J.E. i./02,68; ii./02,23.

Prolonged treatment with large doses in cases of chronic eczema and chorea without good results. On the other hand, Sodium Arsenate hypodermically in chorea gave improvement.—L. i./03,304.

Atoxyl. META-ARSENIC-ANILIDE. An organic arsenic compound. It contains 37·69 per cent. of arsenic; is in the form of a white powder, and possesses a slightly saline taste; is soluble about 1 in 6 of water, and is used in this form for subcutaneous injection. (It is also soluble about 1 in 125 of alcohol 90 per cent.) The solution is slightly warmed at the time of injection in doses of ¾ grain (0.05 Gm.) up to 3 grains (0·2 grammes). It is relatively non-toxic, and large quantities of arsenic can be administered in psoriasis and other chronic skin conditions, in a similar manner to the Cacodyle treatment. The substance may also be given by the mouth in similar doses.—B.M.J.E. i./02,95.

ASPARAGIN.

Syn. ALTHEIN. *Dose.*—1 to 2 grains (0·065 to 0·13 Gm.).

In hard crystals, which are transparent colourless right rhombic prisms, having a slightly acid reaction.

May be obtained from *Asparagus officinalis*, and the roots of marshmallow, liquorice, belladonna, &c. Soluble 1 in 50 of cold water, dissolves in acid and alkaline solutions. Insoluble in absolute alcohol and ether.

This body has decided diuretic effect.

An aqueous solution dissolves mercuric oxide, and is recommended for hypodermic injection in syphilis.—B.M.J.E. i./92,52.

For cardiac dropsy and chronic gout one grain is given three times a day as a diuretic in combination with bromide of potassium.—P.J. 1879,243.

ATROPINA (*Off.*).

Dose.—$\frac{1}{200}$ to $\frac{1}{100}$ grain (0·00032 to 0·00065 Gm.), increased to $\frac{1}{16}$, or in acute mania to ⅛ grain or more.

An alkaloid obtained from *Atropa Belladonna*. It is generally in hard white acicular prismatic crystals or crystalline masses, strongly alkaline, soluble 1 in 500 of water, 1 in 3 of 90% alcohol, 1 in 36 of ether, 1 in

1 of chloroform, 1 in 40 of olive oil, very soluble in glycerin and oleic acid. Melts at 239° to 240° F. Being so insoluble in water, it is not suitable for internal use,—generally given as a sulphate.

The mydriatic alkaloids, Atropine and Hyoscyamine may be manufactured from Atropa Belladonna and Datura Stramonium; Duboisia myoporoides, and Hyoscyamus niger, and Hyoscine may be obtained from the last two plants. Atropine does not exist as such to any great extent in these plants, but is produced from the Hyoscyamine (its isomer) by the action of Alkali which is present in the process of manufacture. Duboisine is nearly pure hyoscine. Pure atropine and pure hyoscyamine are isomeric. So are hyoscine and atroscine, *v.p.*302. By the action of baryta water both Atropine and Hyoscyamine split up into Tropic Acid and Tropine. Atropine is in reality Tropine with the hydrogen atom of the hydroxyl group replaced by the Tropic Acid Radical. Hyoscine and Atroscine split up into Tropic Acid and Oscine. Therapeutically, Hyoscine possesses about five times the calmative power of Atropine or Hyoscyamine.

Tropine and tropic acid may be recombined under certain conditions to form Atropine, or tropine may be combined with other acids such as salicylic or mandelic acid to form salts. These salts when treated with diluted hydrochloric acid form a class of artificial alkaloids, to which the generic name of *tropeines* is given. One of these so produced from the mandelate of tropine is **Homatropine** or oxytoluyltropeine. *v.p.*108.

Atropine should be neither dextro- nor lævo- rotatory, showing freedom from Hyoscyamine or Scopolamine. —Y.B.P. 98,429.

Atropine and its salts are used for ophthalmic purposes to dilate the pupil and to paralyse the accommodation.

Given internally or hypodermically, they are antagonistic to opium and morphine, Calabar bean and physostigmine, jaborandi and pilocarpine, aconite and aconitine, bromal, and hydrocyanic acid. Physiologically, whilst it acts as a "stimulant" to a large part of the central nervous system, it paralyses many of the nerves. It lessens most of the secretions from the body with exception of the urine.

Antidotes.

Stomach pump and emetics followed by stimulants, hot coffee, morphine hypodermically $\frac{1}{3}$ grain every two hours or pilocarpine nitrate $\frac{1}{2}$ grain hypodermically. Electricity, heat, and artificial respiration.

Vitali's Reaction.—On evaporating a trace of Atropine, or one of its salts in a porcelain dish with a few drops of fuming Nitric Acid a yellowish residue is produced, which on moistening with Alcoholic Potash (1 in 10) produces a violet colour. Strychnine does the same on employing a 4 per cent. potash solution, but the colour is evanescent. Veratrin produces a reddish violet or orange red colour.

Atropinæ Methyl-Bromidum. *Dose.*—$\frac{1}{10}$ grain to $\frac{1}{5}$ grain (0·006 to 0·012 Gm.). White crystals sparingly soluble in water. Solutions of strength $\frac{1}{2}$ to 2 per cent. have been employed to produce mydriasis—the effect is said to pass off more rapidly than that of Atropine. It has been given internally to suppress night sweats, for neurasthenia, and to keep down excessive salivation.—M. 02,31.

Atropine Salicylate and **Valerianate** are also used.

The solution of the salicylate is said to have special advantages in not undergoing change by keeping. Soluble 1 in 20 of water.—Br. i./81,lxii.

Liquor Atropinæ Salicylatis (Charing Cross Hospital).—Atropine $\frac{1}{2}$ grain, Salicylic Acid $\frac{3}{4}$ grain, Water 1 ounce.

Atropinæ Sulphas (*Off.*).

Dose.—$\frac{1}{200}$ to $\frac{1}{100}$ grain (0·00032 to 0·00065 Gm.) increased to $\frac{1}{16}$, or in cases of acute mania $\frac{1}{8}$ grain.

In opaque white minute crystals, soluble 2 in 1 of water. Melting point 361·4° F. (P.G. 356° F.).

Umney finds commercial samples melt mostly at 186° to 187°C. (367° to 369°F.).

Tablets, $\frac{1}{100}$ grain (0·0006 Gm.).

Lamellæ Atropinæ, Discs of Atropine (*Off.*).

Contain $\frac{1}{5000}$, $\frac{1}{2000}$, and $\frac{1}{1000}$ grain of the sulphate in each, combined with gelatin, for dilating the pupil; others containing $\frac{1}{500}$ (R.O.H.) and $\frac{1}{250}$ grain paralyse the accommodation. Also prepared containing Atropine Sulphate $\frac{1}{1000}$ grain combined with Cocaine Hydrochloride $\frac{1}{200}$ grain, and $\frac{1}{50}$ grain of each, and Cocaine

$\frac{1}{200}$ with Atropine $\frac{1}{5000}$, (R.O.H. has Atropine $\frac{1}{200}$, Cocaine $\frac{1}{100}$ grain, and Atropine Sulphate $\frac{1}{5000}$ grain with $\frac{1}{500}$ grain of Morphine respectively).

Hypodermic Tablets contain $\frac{1}{200}$, $\frac{1}{150}$ and $\frac{1}{100}$, $\frac{1}{60}$, $\frac{1}{50}$ grain in each, and also $\frac{1}{120}$ grain combined with Morphine Sulphate $\frac{1}{2}$ grain, and Atropine Sulphate $\frac{1}{200}$ grain combined with Morphine Sulphate $\frac{1}{4}$ grain, *vide* also *p*.356.

Injectio Atropinæ Hypodermica.

Atropine sulphate 4 grains, to the ounce of distilled water. *Dose.*—1 to 2 minims, or more.

Injectio Morphinæ et Atropinæ Hypodermica. —See Morphina, *p*.353.

Liquor Atropinæ Sulphatis (*Off.*).

Dose.—$\frac{1}{2}$ to 1 minim (0·03 to 0·06 Cc.), or more.

Atropine Sulphate 1, Salicylic Acid 0·12, Distilled Water *q.s.* to 100. The addition of salicylic acid is objected to, by oculists as being too irritating.

Is much used for ophthalmic purposes. In many cases in which it is used for the eye this solution is much too strong, as it is apt to produce glaucoma.

Guttæ Atropinæ Sulphatis, R.O.H., $\frac{1}{4}$, $\frac{1}{2}$, and 1 per cent.

St. Th. H. has 0·5 or 1 per cent.; U.C.H. $\frac{1}{8}$ to 1 per cent.

Guttæ Atropinæ cum Cocaina R.O.H.

Atropine Sulphate 0·5, Cocaine Hydrochloride 2, Distilled Water 100. St. Th. H. has Atropine Sulphate 1, Cocaine Hydrochloride 2 per cent.

Atropine eye-drops may cause hyper-pyrexia.—B.M.J. i./95,1375.

'**Sterules**,' (*v.p.*487) of **Atropine Sulphate** Solution, 4 grains to the ounce, are convenient in use; also of **Atropine Sulphate** Solution 2 grains to the ounce **with Cocaine** Hydrochloride 10 grains to the ounce.

Glycerinum Atropinæ. St. Th. H. has Atropine Sulphate 25$\frac{1}{2}$ grains dissolved in water 5 ounces, add Compound Tincture of Lavender 100 minims, and made up to 1 pint with Glycerin. This is more cleanly than Glycerinum Belladonnæ and does not stain. It approximates Glycerinum Belladonnæ in strength. U.C.H. has the same formula.

Linimentum Atropinæ.

Atropine 1 (more or less, if ordered), Oleic Acid 15, Castor Oil 15, Oil of Lavender 1, Alcohol (90 per cent.) *q.s.* to 100.

In lumbago and other rheumatic affections is very serviceable used with gentle friction; it is readily absorbed.

St. Th. H. has Atropine Sulphate 38¼ grains, Compound Tincture of Lavender 100 minims, Alcohol 90 per cent. to 1 pint; it contains 0·375 per cent. of alkaloid which is the strength of the Linimentum Belladonnæ. (*Off.*)

Lin. Atropinæ et Chloroformi. St. Th. H. contains 1 of Chloroform to 5 of the latter.

Oleatum Atropinæ.

Atropine 5, Oleic Acid 200. Heat in a water bath till dissolved. Perfume with otto of rose, or lavender, if preferred. Useful to paint on painful parts.

Oleum Atropinæ R.O.H.

Atropine 1, Castor Oil *q.s.* to 100. Heat to dissolve. Forms a stable solution, *vide* Alkaloidal Oils, *p.* 380.

Pessaries of Atropine are prepared with gelatin mass or at times with oil of theobroma, containing generally about $\frac{1}{20}$ grain of the alkaloid in each.

Mistura Atropinæ et Strychninæ, Gt Orm. H.

Dose.—1 drachm (for a child 1 year old).

Solution of Atropine Sulphate 1 minim, Solution of Strychnine Hydrochloride 1 minim, Syrup of Orange 10 minims, Chloroform Water to 1 drachm.

Pilula Atropinæ, $\frac{1}{120}$, $\frac{1}{100}$, $\frac{1}{80}$, $\frac{1}{60}$ grain in each.

Taken at bedtime, to check night-sweating. Is apt to cause dryness of the throat.

Pilula Atropinæ, Arsenici et Quininæ.

Quinine sulphate 18 grains, solution of arsenic 12 minims, solution of atropine sulphate 1 minim, extract of gentian 20 grains, and acacia *q.s.* to make 12 pills. For catarrhal cold, if taken in early stage, one every 3, 4, or 6 hours, nip it in the bud.—Pr. xxxviii.179.

Unguentum Atropinæ (*Off.*).

Atropine 1, Oleic Acid (by weight) 4 (1 grain = 2 drops), heat gently to dissolve, and add lard 45.

Unguentum Atropinæ, R.O.H.

Atropine 1 or 2, Soft Paraffin 100; heat till dissolved. **Unguentum Atropinæ cum Acido Borico,** R.O.H., has Atropine 1, powdered Boric Acid 15, Soft Paraffin 100; and **Unguentum Atropinæ cum Cocaina,** R.O.H., has Atropine 1, Cocaine (alkaloid) 2, in Soft Paraffin 100. **Unguentum Hydrargyri Oxidi Flavi cum Atropina,** R.O.H., has Yellow Mercuric Oxide 1, and Atropine 0·5, Soft Paraffin 100. **Unguentum Iodoformi cum Atropina,** R.O.H., has precipitated Iodoform 15 in place of the Mercuric Oxide in last preparation.

Vaselinum Atropinæ.

Atropine (pure alkaloid) 1, Vaseline 120.

Heat carefully till dissolved. Atropine sulphate is not soluble in vaseline.

This forms a definite, convenient, and economical mode of applying atropine to the eye. A little may be placed within the lower lid. It produces no irritation. For some purposes it will bear dilution.

Atropine and belladonna either given internally, hypodermically, or used externally, diminish perspiration, and will check this when excessive, as in the night sweats of phthisis and other wasting diseases; should be used locally for profuse sweating of the hands, feet, or other parts; also for leucorrhœa and uterine discharges. They likewise check the secretion of milk and saliva, and antagonise such drugs as jaborandi, opium, Calabar bean, aconite, bromal, and prussic acid.—R.

In night-sweating $\frac{1}{200}$ to $\frac{1}{80}$ grain may be increased to $\frac{1}{25}$ grain, taken at bedtime. Is apt to cause dryness of the throat, and is not so useful for this purpose as picrotoxin or pilocarpine.

Causes sleep in acute mania in dose of $\frac{1}{4}$ to 1 grain of sulphate.—Pr. xviii.166; R.

Use of hypodermic injection previous to the administration of chloroform as an antidote to the cardio-inhibitory effects of chloroform has been found of value.

Atropine $\frac{1}{20}$ grain is antagonistic to 1 grain of morphine. In cases of poisoning small doses should be frequently injected hypodermically, and the poison eliminated by drawing off the urine with a catheter frequently.—Pr. xxvi,128.

In lead poisoning, full doses of atropine relieve the colic and head pain, keep bowels open, and assist in return of bodily powers.—L. ii./91,1161; P.J. 1891,429.

In iritis Atropine is indicated, in glaucoma Eserine.—Pr. xxxi.321.

Hæmoptysis is checked by hypodermic injection of atropine.—B.M.J. ii./87,521; Th. Gaz. Feb. 1889,101.

Cholera successfully treated by injection of atropine.—L. i./93,1443; Pr. li.59.

Symptoms of belladonna poisoning from use of atropine eye-drops.—L. i./98,99.

Atropine a valuable antidote in fungus poisoning.—P.J. i./99,197.

Homatropine (*v.p.* 103) and its Salts, **Hydrobromide, Hydrochloride, and Salicylate,** are in minute granular white crystals. Their solutions act as quick and decided local mydriatics, the pupil rapidly returning to its normal condition, but Homatropine, it is said, includes none of the poisonous properties of atropine. The salts are freely soluble in water; Homatropine (the base) is nearly insoluble in water, but soluble in oils, or 1 in 100 of soft paraffin. *Dose of each.*—$\frac{1}{80}$ to $\frac{1}{20}$ grain (0·0008 to 0·0032 Gm.).

Oleum Homatropinæ. A 2 per cent solution in castor oil, by weight, dissolved by heat.

Oleum Homatropinæ cum Cocaina, contains in addition 2 per cent of cocaine. R.O.H. has 10 grains of each to the ounce, which is practically the same strength as this.

These oily solutions have the advantage, when dropped into the eye, of not being washed out by the tears, nor do they give rise to oil-globules on the cornea, like soft paraffin solutions.

Homatropine oil recommended in preference to atropine in estimating lesions of refraction; inconvenience of mydriasis may be partially overcome by eserine solution.

Homatropinæ Hydrobromidum (*Off.*).

In minute trimetric crystals, soluble 1 in 6 of water, 1 in 133 of Absolute Alcohol. Is the salt mostly used. *Dose.*—$\frac{1}{80}$ to $\frac{1}{20}$ grain (0·0008 to 0·0032 Gm.).

Guttæ Homatropinæ, R.O.H., and St. Th. H. 1 in 100.

Guttæ Homatropinæ cum Cocaina, R.O.H. Homatropine Hydrobromide 1, and Cocaine Hydrochloride 2 in 100. St. Th. H. has $\frac{1}{2}$ these quantities.

'**Sterules**' of **Homatropine Hydrobromide Solution** (*v.p.* 487) 4 grains to 1 ounce are prepared, also

'**Sterules**' (*v.p.* 487) of **Homatropine Hydrobromide Solution** 4 grains, with **Cocaine Hydrochloride** 10 grains to 1 ounce.

Injectio Homatropinæ Hypodermica, 1 in 120, is used. *Dose.*—1 to 6 minims (0·06 to 0·35 Cc.).

Lamellæ Homatropinæ (*Off.*) R.O.H. contain $\frac{1}{100}$ grain (0·00065 Gm.) of Homatropine Hydrobromide.

Tablets, Hypodermic, contain Homatropine Hydrobromide $\frac{1}{200}$ and $\frac{1}{200}$ grain.

Tablets, Ophthalmic, contain $\frac{1}{400}$ and $\frac{1}{40}$ grain.

Tablets, Ophthalmic, are also prepared, containing Homatropine Hydrobromide $\frac{1}{250}$ grain withCocaine Hydrochloride $\frac{1}{25}$ grain, and containing $\frac{1}{50}$ grain of each.

Sterile Capsules of Distilled Water, containing 1 drachm are prepared, and are useful for dissolving hypodermic tablets in the syringe for immediate use. The amount is sufficient for a preliminary cleansing of the syringe.

Ophthalmic Discs are also prepared containing $\frac{1}{3000}$ grain of Homatropine in each, likewise $\frac{1}{5000}$ grain, of Homatropine combined with $\frac{1}{200}$ grain of Cocaine and $\frac{1}{200}$ grain Homatropine with $\frac{1}{200}$ grain of Cocaine in each respectively.

Gelatin discs of **Homatropine and Cocaine, R.O.H.** (each $\frac{1}{50}$ grain), are in demand for paralysing the accommodation.—B.M.J.E. ii./91,72.

The mydriatic and general physiological properties of the Hydrobromide of Homatropine resemble, but in a weaker degree, those of atropine, excepting that it slows the heart beats and renders them irregular in force and rhythm.—L.i./80,795.

Action in checking night-sweating inferior to atropine and picrotoxin. Large doses cause staggering gait, like atropine.—Pr. xxv.252.

It enlarges the pupil and paralyses the ciliary muscles as quickly and thoroughly as an equally strong solution of atropine; but the effects of Homatropine disappear entirely in twelve to twenty-four hours, while the effect of atropine continues for many days, and while it lasts the patient is disabled from reading and writing.—B.M.J. i./82,523.

A 1 per cent. solution as eye-drops for muscular asthenopia.—L. ii./99,960; B.M.J. ii./99,765.

Delirium in child following instillation of $\frac{2}{15}$ grain into eyes.—L. i./92,819.

Comparative value of the mydriatics Homatropine, Cocaine, Ephedrine, and Euphthalmine.—P.J. i./99,46.

Ephedrine Hydrochloride.

The salt of an alkaloid from *Ephedra vulgaris, var. Helvetica*, in shining white crystals; very soluble in water; 5 to 10 per cent. solution possesses mydriatic properties.—L. ii./98,24; B.M.J.E. ii./98,92.

Eumydrine.

A white, odourless powder, soluble in water, obtained from Atropine. A powerful mydriatic, but less poisonous. 1 or 2 per cent. solution dilates the pupil after 25 minutes, the maximum is reached in 50 minutes. Dilatation persists for 12 hours. No ill effects.—B.M.J.E. i./04,12.

Mydrine.

Under this name a mixture of homatropine and ephedrine, in the proportion of 1 to 100, has been used for producing mydriasis, 10 per cent. solutions being employed. Acts quickly, but its effect is not lasting, and it produces a slight burning pain.—B.M.J.E. ii./96,32; L. ii./98,24,173.

'**Sterules**' (*v.p.* 487) of Mydrine Solution 10 per cent. are prepared.

Euphthalmine. The hydrochloride of *n*-Methyl-vinyl-diacetone-alkamine (a Mandelic Acid derivative).

A synthetic preparation which dilates the pupil by solutions of 5 to 10 per cent., causing but little discomfort and the accommodation is but slightly dis-arranged. Its action has been compared to that of homatropine, but its effects pass off more quickly.—B.M.J.E. ii./98,24; B.M.J. ii./99,774; C.D.i./00,359.

Guttæ Euphthalminæ, R.O.H., 2 in 100.

'**Sterules**' (*v.p.* 487), **of Euphthalmine** Solution 10 grains to the ounce, are prepared.

Lamellæ Euphthalminæ, R.O.H., $\frac{1}{100}$ grain in each. Solutions 2–5 per cent. dilate the pupil sufficiently for ordinary purposes, and do not irritate the conjunctiva.—Therap. 1899,326. Strength $\frac{1}{50}$ gr. are also made.

Euphthalmine (the base) in snow-like crystals, slightly soluble in water, dissolves in Castor Oil; a 2 per cent. solution is used as a mydriatic.

Fifteen cases of ophthalmia treated with Euphthalmine, results satisfactory. 2 per cent. to 6 per cent. solutions used. Chemically it is closely allied to β-eucaine. Ekaiodoform vaseline was used as the antiseptic application. —Therap. 1901,14.

Euphthalmine Salicylate, a salt very readily soluble in water.—P.J. i./98,449.

AURANTIUM.

Aqua Aurantii Floris (*Off.*). *Dose.*—½ to 2 drachms (1·8 to 7 Cc.). of the diluted water.

Distilled from the flowers of *Citrus Aurantium*, var. *Bigaradia.* Is a saturated solution of the oil, and must be diluted immediately before use with twice its volume of distilled water.

Oleum Neroli. The oil obtained in the distillation of above flowers. Much used in perfumery. Dilution with twice its volume of absolute alcohol preserves it from oxidation.

Pasta Gummosa. Resembles *Pastilles de Guimauve.*

Gum Acacia 800, Sugar in Powder 800, Water 400 or *q.s.* Mix and evaporate with agitation to the consistence of honey; beat with White of Egg 600 and evaporate further, stirring constantly at a low heat until the mass does not run from the spatula; then mix in Oil of Neroli 1 (in Alcohol *q.s.*).

Syrupus Aurantii Floris (*Off.*).

Sugar 6, Distilled Water 2, Orange Flower Water, undiluted, 1. *Dose.*—½ to 1 drachm (1·8 to 3·5 Cc.).

Cortex Aurantii (*Off.* and **Indicus, I.C. Add.**).
Dried and fresh outer peel of *Citrus Aurantium, var. Bigaradia*, the Bitter Orange (in India other varieties may be used if aromatic and bitter); from the fresh peel is now made

Tinctura Aurantii (*Off.*). 1 in 4 Alcohol (90 per cent.).
Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Mixtures containing Salts of Iron will become dark in colour with all preparations of orange peel.

Syrupus Aurantii (*Off.*).
Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).
Tincture of Orange 1, Syrup 7.

Vinum Aurantii Detannatum, B.P.C.
Gelatin 1, Orange Wine 640, macerate 14 days.

Infusum Gentianæ Compositum Concentratum, B.P.C. *Dose.*—30 to 60 minims.

A Tincture 1 in 2 is made of fresh Lemon Peel 2 ounces; Gentian 2, and Orange 2, in No. 20 powder are thrice macerated 24 hours in Distilled Water 20, and pressed (or macerated in Distilled Water 15 and percolated with more to obtain 40), the first pressings (or percolate) of 10 with the Tincture of Lemon added are set aside; remainder is concentrated to 5 and added to the portion set aside with Alcohol 90 per cent. *q.s.* to make 20. Is eight times strength of B.P. infusion.

AURINARIA.

These are ear cones or aural bougies made either with Gelatin or Theobroma basis, and are medicated with Boric Acid, Chinosol, Cocaine, Iodoform, Lead Acetate, Morphia, Opium, Zinc Sulphate, Zinc Sulphocarbolate, and compounds of these in some instances. *Vide* Index for list.

They should be inserted and retained with a small plug of cotton wool.

AURUM.

Auri Bromidum. **Auric Bromide.**
Dose.—$\frac{1}{60}$ to $\frac{1}{10}$ grain (0·001 to 0·0065 Gm.), increased to ⅕ grain, well diluted.

A brown, non-deliquescent powder, soluble in water.

In epilepsy and migraine, tolerated better than other bromides. Epileptics who have taken it sometimes remain for years free from attacks.—Rép. de Pharm. 1889,163.

Good results in several cases of hysteria and epilepsy, given in doses of $\frac{1}{5}$, increased to $\frac{1}{2}$ grain or more.—L. i./90,869; Th. Gaz. 1890,356; Pr. xlv.301.

Therapeutic uses of gold salts:—In nervous dyspepsia, amenorrhœa, chronic Bright's disease, nervous disorders, vertigo; old syphilitic cases cured.—B.M.J. ii./91,1133.

Useful in alcoholic neurasthenia, but in some American 'Gold Cures' gold was absent.—B.M.J.ii./92,48,85; L.ii./92,106,285.

Liquor Auri et Arsenii Bromidi.

Auric Bromide 1½ grains, Oxybromide of Arsenium 3 grains (or Clemens' Solution, *v.p.*95, 192 minims), Distilled Water to 1 ounce. *Dose.*—5 to 10 minims (0·3 to 0·6 Cc.). Another formula.—P.J. ii./96,111.

Liquor Auri et Hydrargyri Bromidi.

Auric Bromide, Mercuric Bromide, of each 1½ grains, Distilled Water to 1 ounce. *Dose.*—5 to 10 minims (0·3 to 0·6 Cc.).

Given for neurasthenia, epilepsy, syphilis, and acne.—N.Y. Med.J. 1893,435; Med. Ann. 1895,10.

Auri Tri-Chloridum.

Dose.—$\frac{1}{64}$ to $\frac{1}{16}$ grain (0·001 to 0·004 Gm.). In yellow crystals; contains about 50 per cent. of gold. Is easily soluble in water and alcohol.

Has been given as an alterative for phthisis and lupus. Is largely used in photography.

Auri et Sodii Chloridum. Gold and Sodium Chloride. (Codex, U.S. and P.G. iii.)

Dose.—$\frac{1}{30}$ to $\frac{1}{12}$ grain (0·0022 to 0·0054 Gm.), increased to ½ grain in a pill with kaolin ointment.

An orange-yellow crystalline, deliquescent powder, soluble 1 in 2 of water; only partially soluble in alcohol. The Codex preparation contains a molecule of each salt combined, containing 49·6 per cent. of metallic gold. The U.S. preparation is a mixture of equal parts by weight of the two salts; it yields 32·4 per cent. of gold, and that of P.G. 30 per cent. It is sometimes used as a caustic, and given internally for syphilis. Combined with strychnine it is useful in neurosis.

Lupus successfully treated by hypodermic injection of chloride of gold with cyanide of potassium; doses from $\frac{1}{1000}$ to $\frac{1}{100}$ grain of each.—B.M.J.E. i./91,166.

BALSAMUM GURJUNÆ.

Gurjun Balsam; Wood Oil.

Dose.—½ to 2 drachms (1·8 to 7 Cc.).

A viscid balsam obtained from the trunk of the growing tree *Dipterocarpus turbinatus* and other species of this genus; imported from the East Indies. It is very fluorescent, has an opaque dark, greenish grey colour seen by reflected light, yet is transparent and reddish brown in strong daylight; it has the weak aromatic odour and bitterish aromatic taste of copaiba without the acridity—has been used as an adulterant of copaiba. It is not completely soluble in either ether or alcohol; emulsified with mucilage of acacia, it is used with success like copaiba, for gonorrhœa; and, in the East, as a remedy for leprosy, an emulsion is made of equal parts of the balsam and lime-water, which is used freely as a liniment and given to the extent of 4 drachms three times daily.

As an expectorant, given with malt extract.—L. i./90, 962; Pr. xlv.132; Th. Gaz. 1890,400.

BARIUM.

Barium Chloratum, P.G. Barium Chloride.

Dose.—½ to 1½ grains (0·03 to 0·1 Gm.). Maximum single dose 3 grains (0·2 Gm.), or 9 grains (0.6 Gm.) per diem.

In colourless crystalline plates, with bitter saline taste. Soluble 1 in 2½ of water. Solution is destructive to bacteria. Mostly used for analytical purposes, but possesses cardiac, tonic and alterative properties; has been tried for syphilis and scrofula.

Barium Chloride has been found of value as a heart tonic; it lessens cardiac pain. In the form of **Barium Water** (*vide* Mineral Waters) it has also been much used also for glandular swellings.

Barii Sulphidum.

Dose.—½ to 1 grain in keratin coated pills.

A greyish yellow powder, soluble in water, given as an alterative in syphilitic affections.

Barium Sulphide Depilatory.

Barium Sulphide, in fine powder 1 part
(Or less or more, up to 3 parts, if ordered).
Wheat Starch Powder ... 3 parts.

Make into a cream with water. When required for use, spread it on the part and let it remain five or ten minutes, then remove with a blunt knife. N.B.—It temporarily reddens the skin.

The safest and best depilatory.—M.C. Feb. 1892,322; B.M.J. i./92,639.

Unna recommends equal parts of sulphide of barium, starch, and oxide of zinc.—M.C. Oct.92,47; L. ii./94, 290.

BELLADONNA.

Deadly Nightshade (*Off.*).

All parts of the plant *Atropa Belladonna* yield the alkaloids atropine and hyoscyamine. The root contains from 0·3 to 0·8 per cent. of total alkaloids. The leaves contain 0·2 to 0·7 per cent. of total alkaloids principally Hyoscyamine. Methods of assay of leaves, root and extract.—P.J. ii./00,195; i./03,268.

Poisoning by belladonna is well treated by pilocarpine. B.M.J. ii./93,12.

The leaf only to be used dried. Powdered drug to be used entire, *i.e.*, without separation of any residue.—C.U.D.

As to the administration of Belladonna, according to Ringer: "A scarlet rash often breaks out on the skin, a rash said to be like that of scarlet fever." The local application of Belladonna also produces in some persons a general red rash with redness of the throat and dilated pupils. Similarly, Lauder Brunton says: "Locally applied it can be absorbed from the skin and produce its general symptoms." After full doses (*i.e.* internally) the pupils become dilated and a red rash appears on the skin like that of scarlatina."

Atropina, *v.p.*102.

Chloroformum Belladonnæ, B.P.C.

Belladonna Root, in No. 60 powder,	20 ounces.
Strong Solution of Ammonia ...	1½ ,,
Distilled Water	20 ,,
Chloroform	*q.s.*

Macerate the belladonna with the ammonia and water, previously mixed, for 4 hours, dry, and again reduce to No. 60 powder. Macerate for 24 hours with 20 ounces of chloroform in a percolator provided with a tap, then percolate slowly, adding more chloroform until 30 ounces are obtained. Mixes with oils; 1 to 3 of olive oil is useful for painful rheumatic affections.

Collodium Belladonnæ. — *Syn.* **Emplastrum Belladonnæ Fluidum, B.P.C.**

Alcoholic Extract of Belladonna Leaf 960 grains (or sufficient to yield ½ per cent. of alkaloid in the collodion), Rectified Spirit 9 ounces, dissolve and add Pure Ether 9 ounces. After 12 hours decant, dissolve in the mixture Camphor 130 grains, Pyroxylin ½ ounce, and add sufficient spirit and ether, in equal volumes, to produce 20 ounces.

Emplastrum Belladonnæ (*Off.*).

Liquid Extract of Belladonna 4, evaporate to weigh 1 (or less), and add Resin Plaster, previously melted, 5 (or *q.s.* to 6). Contains 0·5 per cent. of the alkaloids of Belladonna root.

Poisonous symptoms from.—B.P. 1885; B.M.J. i./99,849,952.

Many cases of virulent skin irritation, erythema, and toxic symptoms have been noted as due to the use of this official plaster, especially when applied to the breast. This plaster is only half the strength of that of the B.P. 1885, but it is even now too strong to be used with safety. Equal parts of this plaster and resin or soap plaster would be preferable.—P.J. i./03,869,903.

A case of Belladonna poisoning from the use of a plaster.—B.M.J. i./03,1141.

A good method of estimation.—P.J. ii./99,147.

Emplastrum Belladonnæ Extensum.

Belladonna plaster in rubber combination spread on calico in porous sheets 7 in. by 5 in. and in yard rolls 7 in. wide, porous and non-porous (*American*).

Similar plasters are also prepared with belladonna and aconite combined.

Plaster mulls are spread containing 10 grammes of Extract of Belladonna in ⅕ square metre, *v.p.* 634

Emplastrum Belladonnæ Viride, B.P.C.

Mix Alcoholic Extract of Belladonna Leaf, *q.s.* = 11 grains of Alkaloids and Resin Plaster (melted) *q.s.* to 10 ounces. Contains 0·25 per cent. of Alkaloids, and is only half the strength of the B.P. Emplastrum Belladonnæ.

Extractum Belladonnæ Viride (*Off.*).

Dose.—"¼ to 1 grain" (0·016 to 0·065 Gm.), increased to 2 grains or more.

A green extract prepared from the expressed juice of leaves and young branches (3 to 3½ ounces are procurable from a pound of leaves); it contains from 0·5 to 2·0 per cent. (average 1) of alkaloids, and might be standardised to contain 1 per cent. For methods, *see* P.J. i./94,740; ii./97,517; ii./98,165.

It is doubtful whether the "green" extracts will find a place in the next Pharmacopœia.

Exophthalmic goître, ½ grain thrice daily of decided service.—Pr. 1.5.

Extractum Belladonnæ Alcoholicum (*Off.*).

Dose.—¼ to 1 grain (0·016 to 0·065 Gm.).

A brownish powder; prepared by concentrating the liquid extract of belladonna by evaporation and mixing with milk sugar, so that 20 of liquid extract yield 15 of product in powder. It contains 1 per cent. of the alkaloids of belladonna, and is only about one-third strength of preparation in B.P. 1885.

Extractum Belladonnæ should be a "solid" extract (containing about 10 per cent. of water) prepared by means of alcohol 70 per cent. apparently from the leaf. Alkaloidal strength to be defined "hereafter."—C.U.D.

In the official process of assay, the fatty matter should be first removed by shaking the sample (acidified) with chloroform.—P.J. i./99,432.

Modes of assay.—P.J. i./03,268.

Ether preferred to chloroform as the immiscible solvent, and a little tragacanth may be added to assist separation.—P.J. ii./00,195; Y.B.P. 1901,40.

Extractum Belladonnæ Folii Alcoholicum, B.P.C.

Solid extract made with alcohol 90 per cent., contains about 5 per cent. of alkaloids. U.S. orders 2 parts alcohol and 1 water as solvent.

Extractum Belladonnæ Liquidum (*Off.*).

Dose.—⅓ to 1 minim (0·002 to 0·06 Cc.).

Belladonna root in No 20 powder, 8 parts, is percolated in 4 successive portions with 30 parts of a mixture of Alcohol 7, Distilled Water 1; collecting 12½ parts of the final percolate. This is diluted with the menstruum, adjusting the strength so that the liquid extract shall contain 0·75 per cent. of the alkaloids of Belladonna root.

Glycerinum Belladonnæ, B.P.C.

Green Extract of Belladonna	...	1 ounce.
Boiling Distilled Water	... ...	1 drachm.

Rub together in a warm mortar to produce a smooth paste, and add

Glycerin	... ...	*q.s.* to 2 ounces (fluid).

To check pain and inflammation, is often painted on boils, abscesses, and carbuncles, and, covered with a poultice, also applied on lint to the breasts to disperse milk. G.H. is one-third weaker. R.O.H. orders 3½ oz. of glycerin to the ounce of extract.

Linimentum Belladonnæ (*Off.*).

Camphor 1, Alcohol (90 per cent.) 6. Dissolve and add Liquid Extract of Belladonna 10, Distilled Water 2, Alcohol (90 per cent.) *q.s.* to 20. A useful topical sedative for neuralgia and rheumatic pains. It contains 0·375 per cent. of alkaloids.

Poisoning by above, pilocarpine an antidote.—B.M.J. i./81,594; i./90,420,720; i./97,1219; L. ii./90,175.

Linimentum Belladonnæ Compositum.

Liniment of Belladonna 7, Chloroform of Belladonna 1.

Sprinkled on impermeable piline or the textile side of American oiled cloth, applied constantly, relieves lumbago.

Pilula Quininæ cum Belladonna, R.O.H.

Green Extract of Belladonna ⅛ grain, Quinine Sulphate 1 grain, Confection of Roses *q.s.*

Pulvis Hydrargyri cum Creta, et Belladonnæ, R.O.H. *Dose.*—5 grains (0·32 Gm.).

Mercury with chalk 2 parts, Belladonna Leaves, in powder, 1 part, Sugar, in powder, 2 parts.

Succus Belladonnæ (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.). Expressed juice of leaves and branches with one-third of 90 per cent. alcohol added.

Alkaloidal strength about 0·05 per cent.

Hay fever is relieved by one minim every hour.

Suppositoria Belladonnæ (*Off.*).

Contain Alcoholic Extract of Belladonna 1½ grains (0·1 Gm.), with Oil of Theobroma *q.s.*

Pessaries may also be made containing the same or double the quantity of extract.

Suppositoria Belladonnæ ½ grain, **et Morphinæ Hydrochloridi** ¼ grain.

These possess a useful sedative effect, and are valuable in irritated and painful conditions of the rectum.

Tinctura Belladonnæ (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Liquid Extract of Belladonna 1, Alcohol (60 per cent.) *q.s.* to 15. Is about double the alkaloidal strength of that in B.P. 1885.

Tablets are prepared each equivalent to 2 and 5 minims.

Full doses are very useful for incontinence of urine.

Strength to be 10 per cent. by percolation with alcohol 70 per cent.; with dried leaf only (C.U.D.) would be a retrograde step owing to variation of the crude drug.—B.M.J. i./03,29.

Appendicitis has been treated by full doses (10 to 15 minims) with sodium salicylate.

Tinctura Belladonnæ Ætherea.

Prepared with Ether, 1 in 1½, with Camphor $\frac{1}{20}$. Recommended in place of liniment for quicker absorption.—L. ii./90,67; P.J. 1890,84.

Unguentum Belladonnæ (*Off.*).

Liquid Extract of Belladonna 8, evaporate to 1, and add Benzoated Lard 9. Contains 0·6 per cent. of alkaloids.

BISMUTHUM.

The absorbent action of the preparations of bismuth taken internally is increased by combination with antiseptic organic compounds. These combinations have been much recommended in those disorders of the digestive tract in which several infectious diseases make their early manifestations. Thus the salicylate, and naphthol, phenol, pyrogallol and bromophenol compounds have been brought into use. These check the fermentative processes forming ptomaines, yet, it is said, do not interfere with intestinal digestion. Bismuth compounds are in general incompatible with potassium iodide, the insoluble brown bismuth tri-iodide being formed.

Bismuthi Benzoas, Bismuth Oxybenzoate.

Dose.—5 to 20 grains (0·3 to 1·2 Gm.) thrice daily.

Antiseptic, internally in gastro-intestinal diseases externally as a dusting powder.

Bismuthi Carbonas, Bismuth Oxycarbonate (*Off.*) *Syn.* BISMUTH CARBONATE.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

Suspended in an ounce of water by means of a drachm of mucilage of tragacanth or about 6 grains of compound powder of tragacanth. The following forms an agreeable dose:—

Mistura Bismuthi.

Bismuth Oxycarbonate 10 grains, Sodium Bicarbonate 10 grains, Mucilage of Tragacanth 1 drachm, Compound Tincture of Cardamoms 30 minims, Spirit of Chloroform 10 minims, Cinnamon Water to 1 ounce.

Tablets, 5 grains, to be crushed and swallowed with a little water.

Pastillus Bismuthi Carbonatis (3 grains) **cum Morphinæ Acetate** ($\frac{1}{40}$ gr.), *v.p.*275.

Collapsubes (*v.p.*217, with rectal tube attachment) of Bismuth 20 per cent., Morphine ½ per cent., and Cocaine 3 per cent. Ointment with soft paraffin basis, are useful as an astringent in hæmorrhoids and for allaying irritation.

Liquor Bismuthi et Ammonii Citratis. *Syn.* **Liquor Bismuthi** (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Contains 5 grains of citrate = 3 grains of oxide of bismuth in 1 drachm; is apt to become fungoid. Evaporated to a syrupy consistence and spread on glass and dried, it produces soluble small shining translucent scales of

Bismuthi et Ammonii Citras.

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

Bismuthi Citras, U.S.

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

A white crystalline powder, almost insoluble in water and alcohol 90 per cent., but soluble in solution of ammonia. It has astringent and stomachic properties.

Elixir Bismuthi.

Dose.—1 drachm (3·5 Cc.).

Bismuth Citrate 1, Distilled Water, 6, Solution of

Ammonia ¾ or more if needed to dissolve the bismuth. Dissolve, filter and add Simple Elixir *q.s.* to 30.

Liquor Bismuthi Concentratus, B.P.C.

Dose.—15 to 30 minims.

Bismuth Subnitrate 7, dissolve with heat in Nitric Acid and Water of each 5, when cold add Citric Acid 5, dissolved in Water 7, then gradually Sodium Bicarbonate 8¾, mixed with Water 7. Wash the precipitate till free from nitrates, collect and dissolve it in Solution of Ammonia 6 or *q.s.*, Solution of Ammonium Citrate 12, add Distilled Water *q.s.* to 50. Filter.

Mistura Bismuthi Composita, B.P.C.

Dose.—20 to 30 minims (1·2 to 1·8 Cc.).

Morphine Hydrochloride 8 grains, Distilled Water 4 drachms, Compound Tincture of Cardamoms 3 ounces, Chloroform 70 minims, Liquid Extract of Nux Vomica 135 minims, Diluted Hydrocyanic Acid 320 minims, mix, add Concentrated Solution of Bismuth 15 ounces, and Distilled Water *q.s.* to 1 pint.

Mistura Bismuthi cum Pepsina.

Glycerinum Pepsinæ 1 drachm added to a dose of the above.

Tabellæ, Bismuthi et Pepsinæ.

Bismuth Carbonate 3 grains, Pepsin 3 grains, both in chocolate basis, also compressed tablets.

Tablets, Bismuth, Pepsin and Charcoal.

Contain 2 grains of each.

Bismuthi Iodo-Resorcin-Sulphonas. *Syn.* ANUSOL.

Suppositories of this are used as a remedy for hæmorrhoids.

Bismuthi Nitras Cryst., CRYSTALLISED BISMUTH NITRATE.

Dose.—5 to 10 grains (0·3 to 0·65 Gm.).

In colourless deliquescent crystals, which if dissolved in a small quantity of water give a solution with an acid reaction, this on further dilution throws out basic bismuth subnitrate, is practically insoluble in Alcohol 90 per cent. It is astringent and antiseptic, and useful for the diarrhœa of phthisis.

Bismuthi Oxidum (*Off.*). *Dose.*—5 to 20 grains (0·32 to 1·3 Gm.).

Is prepared by boiling bismuth subnitrate in solution of soda, washing and drying the deposited dull lemon-yellow-coloured bismuth oxide.

If precipitated with dilute acid from an alkaline solution containing glycerin is said to be obtained pure. —Ph.

Bismuthi Oxybromidum, **Bismuth Oxybromide.** *Dose.*—5 to 7 grains (0·3 to 4·2 Gm.).

A yellowish insoluble powder. A useful sedative in nervous dyspepsia and vomiting.

Bismuthi Oxychloridum, **Bismuth Oxychloride.** *Dose.*—5 to 20 grains (0·32 to 1·3 Gm.).

Is much used as a cosmetic, pearl white or 'blanc de perle.' It gives a white pearly gloss to the skin. If carefully prepared, it is an impalpable, neutral, unirritating powder, and for many purposes should be preferred to the B.P. subnitrate (which is acid and crystalline), oxycarbonate, or oxide. Even for internal administration, if most of the action of bismuth preparations be due to the mechanical coating they give to the irritated parts of the stomach or bowels, the oxychloride should be preferred, as, besides being an impalpable powder, it is a very insoluble one. It coats and adheres to the mucous membrane, and is very useful in irritated conditions of the mouth, throat, vagina, and rectum. From a quarter to half a grain may be used as an insufflation to the larynx.

Pessaries or **Suppositories** may be made with oil of theobroma, containing 10 grains (0·65 Gm.) of the oxychloride in each.

Unguentum Bismuthi Oxychloridi.

Bismuth Oxychloride 1, Vaseline 15.

Is useful for anointing the speculum previous to vaginal examinations.

Bismuthi Oxyiodidum, **Bismuth Oxyiodide.** *Dose.*—5 to 10 grains (0·32 to 0·65 Gm.).

A brownish red amorphous powder, with slight iodine odour, insoluble in water, alcohol or ether. Has been applied as an antiseptic to ulcerous sores in place of iodoform, and injected in suspension in 100 parts of water for gonorrhœa; also as an ointment for rectal affections. Internally given for ulcer of the stomach.—B.M.J. i./89,783.

Bismuthi Phosphas.

Dose.—3 to 8 grains (0·18 to 0·5 Gm.).

A soluble white powder is sold which is probably a mixture of Bismuth Phosphate and Sodium Pyrophosphate. Is used as an intestinal antiseptic and astringent in acute gastric or intestinal catarrh.

Bismuthi Salicylas, Bismuth Salicylate, Bismuth Oxysalicylate (*Off.*). **P.G.iv.**

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

A white or nearly white powder, obtained by the decomposition of true bismuth nitrate and a solution of sodium salicylate; is insoluble in water, alcohol, and glycerin, yields on incineration about 64 per cent. of Bismuth Oxide. Has been used with advantage in some forms of diarrhœa, typhoid fever, &c.—P.J. 1883,243, 568; 1885,889; L. i./88,1100; B.M.J.E. i./92,99.

Benzol is recommended for extracting any free Salicylic Acid. Alcohol decomposes it.—P.J.i./04,219.

Valuable remedy for gastric catarrh.—L. ii./86,31.

A good substitute for iodoform.—P.J. 1895,962.

Tablets, 5 grains (0·32 Gm.). *Dose.*—1 to 4.

Suppositories of Bismuth Salicylate, 10 grains.

A useful astringent in dysentery.

Bismuthi et Cerii Salicylas.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

A double salt, resembling the above, has also been recommended for sickness, diarrhœa, dysentery, and ulceration of the bowels.

Bismuth Sulphocarbolate or Sulphophenate.

Dose.—4 to 8 grains (0·26 to 0·52 Gm.) in cachets.

A red-tinted whitish powder slightly soluble in water, useful in intestinal affections.

Diarrhœa and Cholera Mixture. (*Board of Health.*)

Aromatic Confection 9 grains, Aromatic Spirit of Ammonia 9 minims, Tincture of Catechu 30 minims, Compound Tincture of Cardamoms 18 minims, Tincture of Opium 3 minims, Chalk Mixture to 1 ounce (= 1 dose).

Thioform, a basic dithio-salicylate of bismuth, is a brownish white insoluble powder, inodorous, recommended as a desiccant antiseptic, especially for eye cases and in veterinary practice.—Pr. lii.30; B.M.J.E. ./96,32.

Bismuthi Subnitras, BISMUTH OXYNITRATE (*Off.*).
Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

Is prepared by the addition to water of crystals of bismuth nitrate, and generally levigated afterwards. It should be remembered that this preparation from its nature is always *acid* in reaction; it is therefore incompatible with alkaline carbonates—many bottles of medicine so prescribed burst in transit. Best suspended in aqueous vehicle by mucilage of acacia, 1 drachm to the ounce, avoid tragacanth.

Useful as a dusting powder in ophthalmic practice, and in gastric ulcer and dysentery.

Dragendorff's Test for Alkaloids.—Bismuth Subnitrate 8, Nitric Acid, S.G. 1·18, 20, add this solution gradually to a concentrated solution of Potassium Iodide 22·7. Cool, decant from Potassium Nitrate formed and dilute to 100 with water. The solution gives a reddish precipitate with the majority of alkaloids.

Suppositorium Bismuthi, U.C.H., has of this salt 10 grains, with Oil of Theobroma 13 grains to make a suppository.

Tablets, 5 and 10 grains (0·32 to 0·64 Gm.).

Trochisci Bismuthi Compositi (*Off.*).
Bismuth Oxycarbonate 2 grains, Heavy Magnesium Carbonate 2 grains, Precipitated Calcium Carbonate 4 grains, with rose basis.

Pulvis Bismuthi Compositus (Ferrier's Snuff).
Morphine Hydrochloride 1, Powdered Acacia 60, Bismuth Oxynitrate 180.

From 1 to 3 drachms to be used as snuff in 24 hours for catarrh.—L. i./76,525. For acute coryza, powdered cubebs may be added.

Bismuthi Oxy-Iodogallas. *Syns.* AIROL, AIROFORM, AIROGEN.

A greyish-green powder, odourless and tasteless. Is three times the bulk of iodoform, and used as a substitute for it in the form of dusting powder, or ointment with lard or anhydrous lanoline.

Has been employed as a non-irritant antiseptic for ulcers, lupus, leprosy, boils, whitlows, chancres, and for intertrigo.

Bismuthi Subgallas.–*Syn.* DERMATOL; BISMUTHUM SUBGALLICUM, P.G.iv.; BISMUTHUM SUBGALLICUM, P. Aus. Add.

An odourless, yellow, insoluble powder, recommended as a powerful non-irritant antiseptic and desiccant. Lessens secretion from weeping surfaces; may be used as a dusting powder alone or with starch.

Resembles powdered iodoform in appearance, but is free from odour and poisonous properties. Applied to fresh clean wounds promoted rapid cicatrization and kept wound dry. Is less suited to septic wounds, and insufficiently stimulating in chronic indolent ulcers.

Given internally for diarrhœa with good results, in doses of 30 to 90 grains daily.—B.M.J.E. i./92,16; P.J. 1892,3.

Ten per cent. ointment with vaseline recommended for burns and eczema of children.—B.M.J.E. i./92,52.

Emulsion composed of Dermatol 2, Gum Acacia 2, Water 25. Used in gonorrhœa, good results.—P.J. ii./00,30.

Collapsubes (*v.p.*217), with catheter attachment, of Dermatol Ointment, 10 per cent., with paraffin basis are prepared, and are useful in gonorrhœa.

Bismuthi Tannas.

Dose.—10 to 30 grains (0·65 to 2 Gm.)

A yellow powder insoluble in water, is astringent, and useful in diarrhœa and dysentery.

Bismutose.

Dose.—15 to 30 grains for children, adults by the teaspoonful.

A compound containing about 20 per cent. of bismuth with 60 per cent. of albumen; useful in gastric ailments.—B.M.J.E. i./02,44.

Naphthol-Bismuth.

Dose.—10 to 30 grains (0·65 to 2 Gm.).

A compound of β-naphthol with bismuth. Is less irritating than naphthol to the stomach and intestines, in which it acts as a useful antiseptic and astringent.—P.J. ii./95, 391.

Phenol-Bismuth.

Dose.—10 to 30 grains (0·65 to 2 Gm.).

A greyish insoluble powder, containing about 20 per cent. of phenol, combined with bismuth oxide. Acts slowly on the digestive tract and does not cause carboluria. Has a similar action to last preparation.

Pyrogallol-Bismuth.
Dose.—2 to 8 grains (0·13 to 0·52 Gm.).

BOUGIES.

Nasal Bougies are termed **Buginaria**. These are of elastic gelatin basis, and are 3$\frac{3}{16}$ inches in length and are medicated with **Carbolic Acid, Cocaine Hydrochloride, Copper Sulphate, Iodoform and Zinc Sulphate.** For list, *see* Index.

Urethral Bougies. These are, *firstly*, of gelatin basis in *two* lengths, namely, 2½ inches and 4 inches, and are directed to be dipped in warm water prior to insertion. For various contents, *see* Index. *Secondly*, of Cacao Butter of *any* length up to 6 inches if desired, and of six sizes, with the following diameters:—No. 1, $\frac{1}{8}$ inch; No. 2, $\frac{5}{32}$ inches; No. 3, $\frac{3}{16}$ inch; No. 4, $\frac{7}{32}$ inch; No. 5, ¼ inch; No. 6, $\frac{5}{16}$ inch. These are for the treatment of gonorrhœa in its various stages. Those of Cotarnine (*v.p.*363) are used to check bleeding.

For list, *see* Index.

BROMUM.

This element is not used medicinally in the free state.

Glass Capsules, 1, 2·2, and 4 Cc. and *Liquor Bromi, v.p.* 480.

The following medicinal inorganic **Bromides** contain the halogen in these proportions:—Ammonium Bromide 81·63 per cent., Calcium Bromide (+6H_2O) 51·95 Anhydrous 80 per cent., Lithium Bromide 91·95 per cent. Potassium Bromide 67·2 per cent., Rubidium Bromide 73·8 per cent., Sodium Bromide, B.P. (anhydrous) 77·67 per cent., Strontium Bromide U.S. (+6H_2O) 44·99 per cent. (if exsiccated about 64 per cent.), Zinc Bromide 71·1 per cent.

Magnesii Bromidum (+6H_2O) contains 54·9 per cent. of Bromine, given in doses of 10 to 20 grains (0·65 to 1·3 Gm.) for hysteria and epilepsy as a nervine sedative. Soluble 1 in 0·6 of water and 1 in 2 of alcohol 90 per cent.

Manganesii Bromidum (+4H_2O) contains 55·8 per cent. of Bromine, and is given in doses of 1 to 3 grains (0·06 to 0·5 Gm.) as a nervine tonic This salt is soluble 1 in less than 1 of water and alcohol.

Both of these may contain less water of crystallisation.

Calcii Bromidum.

Dose.—10 to 20 grains (0·65 to 1·3 Gm.)

A white crystalline powder soluble 1 in 0·3 of water and about 1 in 0·6 of alcohol 90 per cent. Has been given in epilepsy with good results.

Bromal. A yellow liquid miscible with water and ether. Sp. Gr. 2·3, has similar properties to the following, which is most used.

Bromal Hydras. Bromal Hydrate.

Dose.—2 to 5 grains (0·13 to 0·32 Gm.) at bedtime for relieving pain or producing sleep.

In large oblique colourless prisms, which melt on the hand. It is not quite so soluble or readily soluble in water as chloral hydrate. Applied externally to the skin, it causes irritation and great infiltration of the tissue, as when dry cupping-glasses are used. Being much more active physiologically than chloral hydrate it is not suitable for internal administration, as it causes pyrosis, vomiting, and diarrhœa.

In epilepsy, tried without success.—Stillé and Maisch.

Relieves inflammatory fever of acute gout.—B.M.J. ii./88,151.

Bromalbacid.

Dose.—15 to 30 grains per diem (1·0 to 2·0 Gm.).

A brownish powder containing 6 per cent. of bromine; used as a nervine sedative.

Bromalin.—*Syn.* BROMETHYLFORMINE, HEXAMETHYLENTETRAMINBROMETHYLATE.

Dose.—10 to 30 grains (0·65 to 2 Gm.).

In colourless scales or white crystalline powder, soluble 1 in 0·6 of water, and about 1 in 25 of alcohol 90 per cent. Used as a nerve sedative, and especially in epilepsy, in doses double those of potassium bromide, with the same success but without skin eruptions or fetor. —B.M.J.E. i./95,24; P.J. i./95, 912,990,1115.

Brominoleum, Brominol (33 per cent.) — *Syn.* BROMIPIN.

Dose.—10 to 60 grains (0·65 to 4·0 Gm.) approximately equivalent in content of Bromine to 5 to 30 grains Potassium Bromide.

An additive compound of Bromine with Sesame Oil *

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* In view of a probable Imperial Pharmacopœia in the uture, it has been suggested that this oil, or arachis oil, or urified cotton seed oil may supplant olive oil.

(*v.p.*xxii.) containing 33⅓ per cent. of the halogen. Is recommended as being more completely assimilated than the Alkaline Bromides, being absorbed by the intestine when acted on by the pancreatic secretion and bile, as causing no rash, none of the depression which sometimes results from Bromides, and being effective in attacks of epilepsy. It can be given by rectal injection or rubbed into the skin.

It is used as a substitute for the alkaline bromides in epilepsy and all forms of nerve troubles where the bromides would be employed.

The compound may be prepared by adding bromine (somewhat in excess of the actual quantity required) in small quantities at a time to Sesame Oil contained in a stone jar surrounded by a cooling mixture. The operation should be conducted in a draught chamber. Wash the product with 90 per cent. alcohol to remove acidity. Dry the compound to get rid of the alcohol incorporated with it during washing by heating in vacuo at 50° C. Having then ascertained the content of bromine in the compound, adjust the preparation by adding more sesame oil so that it shall contain 33⅓ per cent. It forms a thick yellow oil, odourless and of oily taste. Sp. gr. 1·0125. The compound may also be prepared by the action on the oil of Bromine-monochloride in alcoholic solution, *v.* Iodinol, *p.*319.

Brominol may be given shaken up with an equal volume of syrup, in beer, wine or milk, or emulsified as follows: Brominol 33⅓ per cent. 2 ounces, Gum Acacia 1 ounce, Chloroform 18 drops, rub together and add quickly with vigorous agitation water *q.s.* to 6 ounces. Dose of 2 drachms equals 20 grains Potassium Bromide. A weaker **Brominol** containing 10 per cent. of Bromine is also prepared. A dose of ¼ ounce of this equals approximately 20 grains of Potassium Bromide.

Capsules contain 2 Gm. of 33⅓ per cent. Brominol in each, equivalent to 15 grains Potassium Bromide.

Mistura Brominol. Brominol 30 grains, Gum Acacia 30 grains, Tincture of Nux Vomica 6 minims, Chloroform 15 minims, water to half an ounce. For one average dose.

Brominol has been found to have special influence in epilepsy. The urine from patients under the Brominol treatment contains an appreciable quantity of Bromine in combination, and the fæces contain traces.

Bromocoll.

Dose.—In ordinary cases 8 grains (0·5 Gm.), increased to 130 grains (9.0 Gm.) for epileptics three times daily.

A Bromine-Tannin-Gelatin compound, containing 20 per cent. Bromine and 30 per cent. of Gelatin in the form of yellowish powder. May be administered in cachets. Is said to be a useful substitute for Alkaline Bromides in the treatment of epilepsy, insomnia, melancholia and nervous headaches, vomiting of pregnancy, also as a dusting powder for wounds. The compound, being almost insoluble in dilute acids, is claimed to pass undecomposed through the stomach and will not be absorbed until it reaches the intestines. It is stated to produce no constipation; acne, however, appeared in one patient; for epilepsy.—L. i./03,245.

Bromocoll Resorbin 20 per cent. The above in the form of this ointment is advocated in urticaria, eczema, itching piles and various irritations of the skin. —B.M.J.E. ii./02,24.

Bromoform, P.G. iv. *Dose.*—½ to 2 minims (0·03 to 0·12 Cc.) or more.

A limpid, colourless, sweet liquid, with an agreeable odour; sp. gr. 2·829 to 2·833. Soluble in alcohol and ether, slightly so in water. Is decomposed by light. Is a powerful sedative, useful in insane cases.

Capsules contain ½ minim (0·03 Cc.) dissolved in oil.

Aqua Bromoformi. Well shaken 1 minim is dissolved in 2 ounces of water. *Dose.*—1 to 4 ounces.

Mistura Bromoformi. *Dose.*—2 to 4 drachms.

Bromoform ½ (fluid) drachm, tincture of senega ½ ounce, shake well and gradually add water *q.s.* to 6 ounces, syrup of orange ½ ounce. Makes a good emulsion.

Bromoform in whooping-cough is harmless, diminishes number, duration, and severity of attacks, and mucous secretion is more easily got rid of. Vomiting and hæmorrhage soon cease. Two cases of overdose have occurred, but yielded to prompt restoration.—B.M.J.E. i./91,94; Ed.M.J. 1891,471; Th. Gaz. 1891,770.

Results in whooping-cough uniformly gratifying.—Pr.1.100.

Effect most marked, violence of paroxysms reduced, and duration of disease shortened. Poisoning by overdose; recovery.—L. i./93,1062.

Poisonous effects.—L. ii./98,1816; i./99,119; B.M.J. i./01,1202.

BRYONIA.

Bryony.—*Syn.* VITIS ALBA; WHITE BRYONY.

Tinctura Bryoniæ, B.P.C.

From bruised fresh roots of *Bryonia alba* or *B. dioïca*: a tincture is prepared corresponding in strength to 1 of dried root to 10 of alcohol (60 per cent.).

Dose.—1 to 10 minims (0·06 to 0·6 Cc.) or more.

Useful in pleurisy. Given in small doses it relieves the pain and allays the cough. In large doses it is an active hydragogue cathartic, sometimes used for dropsy. The fresh plant applied to the skin will cause vesication. It contains Bryonin, a bitter principle, cathartic and diuretic, soluble in water and alcohol, insoluble in ether. *Dose.*—⅙ grain in granules, 1 every hour until sufficient action obtained.—P.J. ii./96,19; ii./00,776.

Bryony successful as a styptic. An infusion of 1 in 10 arrested metrorrhagia.—L. ii./88,438.

Useful in checking inflammatory pleurisy and assisting absorption of fluid.—B.M.J. i./92,1137.

BUTYL-CHLORAL HYDRAS. (*Off.*).

Syn. CROTON - CHLORAL HYDRATE (formerly so called), TRICHLOR-BUTYLIDENE GLYCOL.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.), in pills or cachets.

This body is produced by the addition of water to liquid Butyl Chloral which is the final product of the action of Chlorine on Aldehyde.

In pearly-white crystalline scales, having a pungent odour resembling that of Chloral Hydrate, and an acrid, nauseous taste. Soluble 1 in 43 of cold water; freely soluble in alcohol, and 4 in 1 of glycerin.

It is, perhaps, the most efficacious remedy in facial neuralgia.—R.

Menthol 2, with Butyl-Chloral Hydrate 1 part, liquefies, *v.p.*348. Combines with Antipyrine, *v.p.*191.

Mistura Butyl-Chloral, T.H.

Butyl-Chloral Hydrate 4 grains, Glycerin 15 minims, Water to 1 ounce.

This dose is very useful as an anodyne in neuralgic affections of the throat, frequently repeated.

Pilula Butyl-Chloral.

Butyl-Chloral Hydrate 3 grains (0·2 Gm.) or more, Glycerin of Tragacanth or Mucilage of Acacia *q.s.* To make one pill. *Dose.*—1 every 2 hours, or hourly.

Pilula Butyl-Chloral cum Gelseminina.—NEURALGIC PILLS.

Gelseminine Hydrochloride $\frac{1}{200}$ grain (0·00032 Gm.) is added to each of the above. **Tablets** of the same formula are also prepared.

These are often very beneficial in facial neuralgia—two to be taken at the outset followed by one hourly until six are taken.

Syrupus Butyl-Chloral, B.P.C.

Butyl-Chloral Hydrate 16 grains, Syrup 1 ounce. Dissolve the hydrate in the syrup made hot.

Dose.—One to four drachms (3·5 to 15 Cc.).

Most useful in true migraine, given with antipyrine, cannabis, or gelsemium; neuralgia of other nerves than the cranial rarely benefited.—Pr. xlvi.296; M.C. May 1891,140.

Chloretone; Trichlor-Tertiary-Butyl-Alcohol.

Dose.—5 to 24 grains (0·3 to 1·5 Gm.) in cachet, capsule, or tablet followed by a draught of water or milk, or suspended in a mixture.

In white needle crystals, with camphoraceous taste, soluble 1 in 200 of water, 1 in 10 of glycerin, 1 in 50 of Aseptic Liquid Paraffin, 1 in 12 of Olive Oil and Oleic Acid. Is a hypnotic, local anæsthetic and an antiseptic.—L. i./00,106; P.J. i./00,264; i./01,521; M.C. ii./00,38.

Chloretone suggested as a douche 0·4 per cent. in warm water for vaginal pruritus.

For piles, 5 grains in a 30 grain suppository; for a dusting powder for wounds and scalds use Chloretone 23, with Zinc Oxide 120, and French Chalk 90 parts.

A useful hypnotic in cases of mental disease.—B.M.J.E. i./02,31.

Capsules 5 grains check sea sickness.—L. ii./03, 136; i./04,253.

CAFFEINA.

Caffeine (*Off.*).—*Syn.* THEINE, GUARANINE.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.) or more

—as much as 18 grains being recommended—given in solution, or in pills with glycerin of tragacanth.

A crystalline alkaloid usually obtained from the dried leaves of *Camellia Thea*, or dried coffee-seeds —*Coffea arabica;* also contained in guarana (*v.p.*280), maté—the leaves of *Ilex paraguayensis*—and kola nuts —the seeds of *Cola acuminata*, growing in Western Africa; it is identical with Theine and Guaranine. Caffeine and Theobromine (*v.p.*503) can be prepared from Xanthine (the latter being di- and Caffeine tri-methyl-xanthine) and indirectly from guano, as Xanthine may be obtained as a derivative of Guanine contained in guano. Caffeine is in needles like white silk, soluble 1 in 80 of water, more so in alcohol, less in ether; acids render it more soluble in water, but it is a feeble base, and on concentrating the solution of the salts they are apt to split up, and the caffeine crystallises out by itself. Caffeine and Morphine fail to precipitate with Mayer's Reagent thus distinguishing them from the majority of alkaloids. It has a bitter, not agreeable taste. It stimulates the heart and raises arterial tension. In excessive doses it causes rise of temperature, convulsions, and paralysis. It is given for hemicrania. Locally, to the eye, it dilates the pupil.

Caffeine and its allies, theobromine and xanthine, and their derivatives are much used as diuretics; they act as direct stimulants to the water-secreting apparatus of the kidneys.

Tea contains on an average 4 to 4½ per cent. of Caffeine; raw coffee about 1·2 per cent., and when roasted about 1·3 per cent.

For the purposes of manufacture tea dust with the strongest yield of alkaloid is extracted.

Pills of Caffeine contain 3 grains.

Useful in cardiac disease, especially where dropsy is a marked symptom. Is apt to induce insomnia. Large doses are required. It is better borne than digitalis.

A stomachic tonic, lessens tissue change, and waste. Has been given in cases of diarrhœa, phthisis, and neuralgia.

Poisoning by 60 grains of citrate caused burning in throat, giddiness, violent vomiting, purging and diuresis, tremors of extremities, pain in stomach and bowels, and great thirst. Recovery: treated with nitro-glycerine, &c. —L. i./83,680. Poisoning by 200 grains; recovery under $\frac{1}{12}$ grain apomorphine.—L. i./89,219; Th. Gaz. Mar. 1889,215.

Caffeine useful in pneumonia as a cardiac stimulant; pulse improves and temperature falls.—B.M.J. ii./88,43. Also in typhoid.—Pr. xli. 138.

Caffeine facilitates muscular labour by increasing activity of cerebro-spinal centres; diminishes sensation of effort and keeps off fatigue.—B.M.J. i./90,735,746; Ed. M.J. Sept. 1890,276.

Caffeine of great service in renal insufficiency, as injection with sodium benzoate.—Th. Gaz. 1890,436.

Administration of caffeine simultaneously with digitalis frequently gives favourable results not obtainable by increasing dose of digitalis. — B.M.J. ii./92,1156; L. ii./92,277.

Bronchial asthma of adults relieved by 5-grain doses of citrate; no ill effects except at times wakefulness, which is not unpleasant.—Pr. liv.318; P.J.1895,935.

Vinum Caffeæ Viridis.

Dose.—1 to 2 ounces.

Coffee berries, green, coarsely ground, 16. Digest in sherry 40, for 14 days. Filter through flannel, press the residue, and make up to volume with sherry for any loss in evaporation; has been suggested for migraine.

"Robur" was an alcoholic preparation of tea.

Kola.—The seeds of *Cola acuminata.*

Description of, and uses.—B.M.J. i./90,969; Ed.M.J. 1890,276; *v.p* 132.

Extractum Kolæ Liquidum. B.P.C.

Dose.—10 to 20 minims.

Kola nuts in 40 powder exhausted with 60 per cent. alcohol; 1=1

Kolanin, a glucoside, is decomposed both by saliva and gastric juice; tonic and stimulant for neurasthenia and migraine. Under the name of Kolanin also specialties consisting of spissated and dried extracts are prepared, the latter said to contain 80 to 90 per cent. of Kolanin. *Dose.*—2 to 5 grains.—B.M.J.E. ii./97,7; Y.B. 1898,85.

Tinctura Kolæ.

Dose.—20 to 60 minims (**1·2 to 3·5 Cc.**).

Kola nuts in powder 1 part, macerate one week in 60 per cent. alcohol *q.s.* to 6 parts.

Vinum Kolæ.

Kola in coarse powder 1, in Sherry 25, macerate for 7 days, filter and flavour with Essence of Vanilla.

Celerina is said to contain Kola, Coca, Celery and Viburnum.

Maté or Paraguay tea, properties and uses. It contains one-fourth as much caffeine as tea, and is slightly less astringent.—B.M.J. ii./90,203; Th. Gaz. 1890,633. Properties of, removes fatigue and induces sleep.—L. i./99,896,1392.

As a drink, recommended.—B.M.J. i./04,401.

Caffeinæ Citras (*Off.*). CAFFEINA CITRATA, U.S.

Dose.—2 to 10 grains (**0·13 to 0·65 Gm.**).

Is directed to be prepared by dissolving caffeine 1 and citric acid 1 in distilled water 2, evaporating to dryness on a water bath, stirring constantly towards the end of the operation, and reducing to a fine powder.

The employment of water is unnecessary.—P.J. i./04,8.

The alkaloid is loosely combined with the acid, which latter may be volumetrically determined with standard Alkali, using Phenolphthalin as indicator.—Ph.

Caffeinæ Citras Effervescens (*Off.*).

Contains 4 per cent. of the citrate, or about 2½ grains in a drachm. *Dose.*—1 to 2 drachms (**4 to 8 Gm.**).

'Vescettes' of Caffeine Citrate.

Dose.—1 or 2.

Each equivalent to 60 grains of the above, and containing about 2½ grains of caffeine citrate.

Effervescent Caffeine (*Base*), 3 grains in 1 drachm.

Dose.—1 to 2 drachms. (**4 to 8 Gm.**).

This, though somewhat bitter, forms a palatable mode of administering a moderately large dose of caffeine. The preparation is said to be invaluable for migraine.

'Vescettes' of Caffeine (*Base*), each contains 3 grains.

To be crushed and taken in water, preferably warm during effervescence.

Effervescent Caffeine Citrate, with Potassium Bromide, has in addition 5 grains of the latter salt to the drachm. For headache.

Tabellæ Caffeinæ Citratis contain 1 grain.

These are of chocolate basis, are portable and agreeable to the taste.

Tablets Compressed, 2 grains (0·13 Gm.).

Tablets, Compressed of Caffeine 1 grain (0.065 Gm.), and **Phenazone** 3 grains (0·2 Gm.).

Dose.—1 to 5.

Tablets, Compressed, Caffeine 1 grain with **Phenacetin** 4 grains. *Dose.*—1 to 5.

Caffeinæ Ammonio-Citras. *Dose.*—1 to 10 grains (0·065 to 0·65 Gm.). A minutely crystalline white powder, slightly soluble in water.

Caffeine Hydrobromide, Hydrochloride and **Hydriodide.**

Dose.—½ to 5 grains (0·032 to 0·32 Gm.) or more. In transparent crystals, slightly soluble in water.

Tablets contain 2 grains each of the hydrobromide.

Effervescent Caffeine Hydrobromide is prepared, containing 4 per cent., or about 2½ grains, in a drachm. *Dose.*—1 to 2 drachms (4 to 8 Gm.).

Caffeinæ Sodio-Salicylas (**Coffeïno-Natrium-salicylicum P.G.iv.**).

Dose.—1 to 4 grains (0·065 to 0·26 Gm.) hypodermically. Maximum dose 1 Gm. (P.G.)

A white amorphous powder, containing 62·5 per cent. of caffeine, and soluble 1 in 2 of water. This salt and the corresponding cinnamate and benzoate act like digitalis, but more rapidly; the benzoate, **Coffeïnum Natrio-Benzoicum,** daily dose up to 3 grammes, is included in P. Aus. Add.

Caffeine is very soluble in aqueous solutions of benzoate, cinnamate, and salicylate of sodium. These dissolve it in chemically equivalent quantities. The following solution with sodium salicylate forms an unirritating hypodermic injection. See also Antipyrine, *p.*191.

Injectio Caffeinæ Hypodermica.

Caffeine 20 grains, Sodium Salicylate 17½ grains, Distilled Water to 1 drachm. *Dose.*—1 to 6 minims, contains 1 grain in 3 minims. Particularly recommended for alcoholic and morphine intoxication, also for hemicrania.

Hypodermic Tablets contain Caffeine Sodio-Salicylate ½ grain (0·032 Gm.).

Caffeinæ Tri-bromidum, Caffeine Di-bromo-hydrobromide.
Dose.—¼ to 1 grain (0·016 to 0·065 Gm.).
In orange crystals, containing 45 per cent. of Bromine in loose combination; should be given in capsule form where cases require combined treatment of Bromine and Caffeine.

Caffeinæ Tri-iodidum, Caffeine Di-iodo-hydriodide. *Dose.*—2 to 4 grains (0·13 to 0·26 Gm.).
In prismatic black iridescent crystals, rich in iodine.

Caffeinæ Valerianas. *Dose.*—½ to 3 grains (0·032 to 0·2 Gm.). In irregular crystals or powder, having the odour of valerian. It controls hysterical symptoms, and is useful in pertussis.

Caffeine-Chloral.
A compound of caffeine and chloral, in small white granular crystals, freely soluble in water, with the acrid taste of chloral. Is analgesic and laxative, and in hypodermic injections of 3 to 8 grains useful in constipation, painful gastric distension, sciatica, and rheumatism.

Iodo-Caffeine.—*Syn.* SODIUM-CAFFEINE IODIDE.
Dose.—2 to 10 grains (0·13 to 0·65 Gm.).
A white powder, slightly soluble in cold, freely in water at 100° F. Contains 65 per cent. of caffeine. Is a good diuretic, especially to prolong diastole in cases of enfeebled heart. Is useful in cardiac dropsy, and pleurisy with effusion. Does not disorder digestion or respiration.—B.M.J. ii./94,1190.

Caffeine Ethylene Diamine. *Dose* (?).
Possesses diuretic properties. It is obtained by the action of Chlor-Caffeine on Ethylene Diamine.

Migranin.—*Syn.* ANTIPYRIN CAFFEINO-CITRICUM, P. Aus. Add.; CITRATE OF ANTIPYRINE-CAFFEINE.
Dose.—8 to 15 grains (0·52 to 1 Gm.).
Contains about 9 per cent. of caffeine and 90 of antipyrine; is of crystalline appearance, easily soluble in water, with a slightly acid reaction, and as its fancy name implies,

is recommended as a specific for migraine and the headache of influenza, and that caused by nicotine and morphine. Is serviceable in headache, but apt to cause sleeplessness.

CALCIUM.

Calcium Carbide (requires special storing.)

In solid, blackish crystalline masses, resembling small pieces of coal. Evolves acetylene gas when brought into contact with moisture or water. May be used as a test for, and in the preparation of, absolute alcohol.—P.J. i./98,139.

Carcinoma of the uterus, piece of carbide applied with success to dried ulcerated surface with a tampon over it, checks bleeding, fetor and discharge.—Münch. Med. Woch., 1900, No. 24.

Calcii Chloridum. (*Off.*).

Dose.—5 to 15 grains (0·32 to 1 Gm.) in aqueous solution, or it is more palatable made into pills with syrup; these must be kept in bottles.

According to the pharmacopœia calcium chloride, anhydrous and most convenient for use in medicine, is in fused white agglutinated masses, dry, but very deliquescent. The porous dried chloride is better adapted for chemical purposes for absorbing water. Crystals of calcium chloride are very deliquescent and unmanageable, as they dissolve in one-fourth their weight of water. Calcium chloride is given in tubercular disease, chorea, glandular affections, to stop the growth of uterine fibroids, and to check the vomiting due to sarcinæ. It is not astringent. It has been recommended as a disinfectant.

To check profuse menstruation it has been found well to give doses of 10 to 15 grains daily for a week before the period; but its use should be avoided if there be kidney disease.

To check intestinal hæmorrhages 30 grains daily may be given internally, and accompanied by rectal injections containing 60 grains to two pints of water: opium may be given in addition. Calcium chloride seems to increase the coagulability of the blood, and so to act as an hæmostatic (Professor Wright).—B.M.J. ii./91,1306.

The salt may be given internally and by enema for several days before an operation.

Mayo Robson gives this drug to obviate hæmorrhage at operations on the bile ducts, 30 grain doses by the mouth, and after operation in 60 grain doses three times a day by the rectum.—L. i./02,1024 ; ii./03,358.

Ten grains three times a day for two weeks before delivery to avoid post partum hæmorrhage.—Med. Ann. 1902,305.

Intra-dental fissure, bleeding from, successfully treated by pledgets of cotton wool soaked in solution 30 grains to the ounce after other hæmostatics had failed.—L. i./03,516; B.M.J. i./02, 1141.

Liquid Extract of Liquorice or peppermint water and syrup disguise the taste—1 hour after a meal is the best time for the dose.—L. ii./03,358.

Liquor Calcii Chloridi, B.P. 1885, was 1 to 5 of distilled water. Dose, 15 to 50 minims (0·9 to 3 Cc.).

In tubercular diseases, phthisis and all wasting diseases of children is claimed to have great power in controlling. For adults, 30 grains three times a day.

In scrofula, is a valuable general tonic, slows and strengthens the pulse; best given to children in milk, after food.—Pr. xxxiv.161.

Acute lobar pneumonia, 22 cases treated successfully with chloride of calcium, 5 to 15 grains every 4 hours.—Pr. l. 263. Corroborated.—B.M.J. ii./93,1374.

Acts as an antipyretic in pneumonia.—Pr. l. iii.343.

Large doses useful in checking bleeding from large vessels.—Clin. Jour. v. 345.

Of service to check and prevent the bleeding of patients with hæmophilia, as after tooth extraction.—L.ii./97, 1061; i./03, 516.

Gastro-intestinal bleeding of children checked by five grain doses many times daily.—L. ii./98,144; on the action of lime salts on the blood.—L. ii./02,15.

Calcii Iodatum, Calcium Iodate. *Syn.* CALCINOL.

Dose.—3 to 4 grains (0·18 to 0·24 Gm.) three times daily in solution.

Tasteless, odourless powder soluble in 380 parts of water at 11·5° C. Contains 51 per cent. of iodine and 16 per cent. of available oxygen. Acts equally well in an acid and alkaline medium as a deodorant and anti-putrefactive.

An antiseptic, somewhat unstable, the action of same being probably due to liberation of iodine and oxygen when coming in contact with putrescent organic matter.—P.J. i./01,27.

Valuable as a substitute for iodoform, and as a gastro-intestinal antiseptic agent. May prove of value in fœtid breath, and in the form of an insufflation 1 in 10 of bismuth carbonate may be beneficial in otorrhœa.—L. ii./00,1867.

Calcium Peroxide.—*Syn.* GORIT.

Dose.—3 to 9 grains (0·2 to 0·6 Gm.) daily.

A useful intestinal antiseptic for infants. Best results in cases of acid dyspepsia.—P.J. i./00,330. It explodes if mixed with Glycerin or Formalin.

Calcii Saccharas, Calcium Bi-saccharate.

Dose.—8 to 30 grains (0·52 to 2 Gm.).

In colourless tufts, soluble in water, used as an antacid for dyspepsia and flatulence, specially useful for children; also as an antidote to carbolic acid poisoning in 10 times above doses.

Linimentum Calcis (*Off.*).

Solution of Lime 1, Olive Oil 1; or with Linseed Oil 1, is known as **Carron Oil**—St. Bart.; Mid. H.

Liquor Calcis Saccharatus, (*Off.*).

Dose.—20 to 60 minims (1·2 to 3·5 Cc.).

Calcium Hydroxide (free from iron, preferably prepared from marble) 1, Distilled Water 19. Mix, and add Syrup (by weight) 3 (=Refined Sugar 2). Contains 1·77 per cent. of Calcium Oxide, or 8·16 grains in 1 ounce.

Mistura Cretæ, Chalk Mixture (*Off.*).

Dose.—½ to 1 ounce (15 to 30 Cc.).

Prepared Chalk 50, Tragacanth 7, Sugar 100, Cinnamon Water *q.s.* to 1600.

The powders are generally kept mixed in a dry condition, and 40 grains of this may be added to an ounce of cinnamon water as required.

Calcii Sulphas.—*Syn.* CALCIUM SULPHATE.

Dose.—20 to 30 grains daily (1·3 to 2·0 Gm.).

For phosphaturia is considered as specific; it may be well given with an equal weight of Heavy Magnesium Carbonate.

Anhydrous Calcium Sulphate, so long as it remains dry, is used to make Plaster of Paris splints. Two pounds require about one pint of water; this sets rapidly and firmly.

Calx Chlorinata (*Off.*). A dull white powder having 33 per cent. available Chlorine. In solutions of 0·25 to 0·5 per cent. may be applied as compresses to burns and ulcers, they heal rapidly.

Calx Sulphurata (*Off.*).—*Syn.* CALCII SULPHIDUM; CANTON'S PHOSPHORUS.

Some forms of it after being heated shine in the dark and are used to make luminous paint.

Dose.—¼ to 1 grain (0·016 to 0·065 Gm.) in pill.

Is prepared by reducing Calcium Sulphate by charcoal. It has a greyish white colour and slight sulphuretted odour; it is but sparingly soluble in water, which solution quickly decomposes, evolving sulphuretted hydrogen. In thus liberating this gas, calcium sulphide possesses properties allied to the sulphurous springs of Harrogate, Barèges, Gilsland, &c. It is found very useful administered for boils, carbuncles, acne, scrofulous sores, especially in glands of the neck, by hastening maturation and preventing formation of fresh boils, &c. For boils, &c., $\frac{1}{10}$ grain is given every hour. For suppurating glands in the neck, ½ to 1 grain every two hours, continued for weeks, is very beneficial.

Pilula Calcis Sulphuratæ, $\frac{1}{12}$, $\frac{1}{10}$, ⅛, ⅙, ¼, ⅓, ½, and 1 grain (U.C.H. ½ grain).

These pills are best prepared by triturating with milk sugar, adding acacia and syrup *q.s.*, rolling into pilules and coating with sandarach solution. Keep in bottles.

Tablets contain ¼, ½ and 1 grain.

In strumous ophthalmia, 5 cases, doses of $\frac{1}{10}$ to ¼ grain effected cures.—Pr. xxviii.17.

In periostitis and alveolar abscesses found of great service.—Stocken's Dental Mat. Med., 2nd ed., 143.

Usual dose is too small for boils; give 1 grain three times a day, increased to 8 grains daily.—L. i./85,64.

Lotio Calcii Sulphurati, U.C.H.

Slaked Lime 4, Sublimed Sulphur 4, Distilled Water 35. Boil together, evaporate, and filter, to produce 20 of solution. This should be diluted with an equal quantity of warm water for painting over the patient, who ought previously to have had a bath, as a remedy for itch, which it will cure in half an hour. It holds in solution calcium pentasulphide with some oxysulphide, and resembles in composition **Vleminckx' Solution.**

Sulphurated Lime Depilatory.

Is a thick milk of lime charged with sulphuretted hydrogen.—P.J. ii./00,486. A less unpleasant, but equally efficacious, application is

Syrupus Sulphatum (H. P. Symonds).

Dose.—½ an ounce (15 Cc.) Sulphate of Beberine 1 grain, Sulphate of Quinine 2½ grains, Sulphate of Iron 2½ grains, Sulphate of Potassium 8 grains, Sulphate of Sodium 8 grains, Diluted Sulphuric Acid 5 minims, Glycerin 12 minims, Distilled Water 48 minims; dissolve and add Syrup to ½ ounce. Filter. Add to each pint, Chloroform 10 minims, mixed with 20 minims of Spirit. Is useful for boils, &c. The sulphates give off some sulphuretted hydrogen, and the bases act as tonics.

Pilulæ Sulphatum.

The salts of half-an-ounce of the above syrup may be prescribed in two pills under this name.

CALENDULA.

Marigold.

From the fresh leaves and flowers of this plant, *Calendula officinalis*, a **Tincture** is prepared equal in strength to 1 of the dried drug in 10 of equal parts rectified spirit and water.

A lotion prepared from the tincture diluted, or an ointment prepared from tincture 1 part, and spermaceti or simple ointment 9 parts, is said to have a beneficial influence over wounds, especially incised wounds. It promotes cicatrization, with but little suppuration.

One minim of tincture with boric acid 2 to 4 grains is a useful insufflation in otorrhœa.—Pr. xxx.366.

Tinctura Calendulæ Florum, B.P.C.

Marigold Flowers, in No. 20 powder 1, Alcohol (60 per cent.) *q.s.* to 5. *Dose.*—5 to 20 minims (0·3 to 1·2 Cc.).

CAMPHORA (*Off.*).

Dose.—2 to 5 grains (0·13 to 0·32 Gm.) in a pill, or alcoholic solution dropped on sugar or in water, or as camphor water. Camphor is sold in bells, and in ubes, 4 to the ounce, 3 to the ounce, 2 to the ounce, ounce, 4 ounce, as well as in a sublimed powder,

Flowers of Camphor. The latter is a very convenient form for making pharmaceutical preparations.*

The manufacture of artificial camphor has been effected by acting on Turpentine with Anhydrous Oxalic Acid with special means and apparatus, the yield being 25 to 30 per cent. of the turpentine.—P.J.i./04,9.

It may also be prepared by oxidising Camphene, a solid terpene $C_{10}H_{16}$ with Chromic Acid Mixture.—Ph.

Cases of Camphor habit.—B.M.J. ii./98,84.

Camphor is soluble in water, 1 in 700, in 90 per cent. alcohol 1 in 1¼ (more soluble in absolute alcohol), freely soluble in ether, chloroform, volatile and fixed oils. Camphor, when mixed in certain proportions with many crystalline substances, causes mutual liquefaction of the two—*e.g.*, camphor 4, phenol 12, and water 1 (see Acidum Carbolicum); camphor 1, and chloral hydrate 1 (see Chloral Hydras); camphor 2 and menthol 3 (see Menthol); camphor 1 and thymol 1 (see Thymol); camphor 2 and β-naphthol 1 (see Naphthol); camphor 2 and salol 3 (see Salol); camphor and butyl-chloral hydrate liquefy when heated, but solidify on cooling; so will camphor 84 and salicylic acid 65 (see Camphora Salicylata). Camphor is powdered by rubbing with a few drops of alcohol. Besides the official preparations, Camphor Water† (Camphor Julep or Mixture) 1 in 1,000, Liniment 1 to 4, Ammoniated Liniment 1 in 8, Spirit 1 in 10, and Compound Tincture 0·34 per cent., the following are in use:—

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* An Essential Oil of Camphor is imported from Japan, generally of a pale straw-colour but varying in shade to a deep black. It has Sp. Gr. 0·898 to 0·990; is a by-product obtained in the production of camphor, and consists principally of a terpene, with about 1 in 4, or a variable quantity, of camphor in solution, together with safrole and eugenol (*v.pp.*536,531). It has a persistent odour, like that of camphor and sassafras or cinnamon. Similar productions have at times come from Formosa and Borneo. They are used by the Chinese as rubefacients in rheumatism, and may prove useful as antiseptics.—P.J. 1885,302; 1887,266. A heavier Oil of Camphor, Sg. 0·96 to 1·02, is also obtained.

† Aqua Camphoræ (*Off.*).—*Dose.*—½ to 2 ounces (15 to 60 Cc.). Camphor flowers 1, Alcohol (90 per cent.) *q.s.* to 3, Distilled Water to 1,000. Camphor is rendered more soluble in water by the presence of carbonic acid, acid carbonate and carbonate of magnesium, sugar, and myrrh, and less soluble by bromide of potassium, liquor potassæ, sulphate of magnesium, alkaline carbonates, and many other salts.—P.J. 1895,619.

Aqua Sedativa. Eau Sedative de Raspail. (*Codex.*)

Spirit of Camphor 10, Sodium Chloride 60, Solution of Ammonia 60, Distilled Water, 1,000. Applied as a compress for migraine and rheumatism, and to contusions.

Camphor Ball.

Spermaceti 4, White Wax 12, Oil of Almonds 5; melt in a water bath, and add Flowers of Camphor 4. Dissolve, and when nearly cold pour into boxes or mould in gallipots. Useful for chapped skin.

Camphorated Chalk.

Flowers of Camphor 1, Precipitated Calcium Carbonate 7. Mix in a mortar, adding a few drops of alcohol, and sift for use as a dentifrice.

Camphorated Carbolic Acid, *v.p.*12.

Elixir Camphoræ. *Dose.*—½ to 1 drachm (1·8 to 3·5 Cc.).

Spirit of Camphor 10, Syrup 5, Distilled Water 1. Contains 1 in 16. It mixes and diffuses well in water.

Oleum Camphoratum, P.G.iv. 1 to 9 of Olive Oil and **Oleum Camphoratum Forte, P.G.iv.** = Linimentum Camphoræ (*Off.*), 1 to 4 of oil.

Pilula Camphoræ.

The most suitable excipient to form camphor into pills is about ⅓ its weight of powdered curd soap and a few drops of proof spirit, or a little lard in a warm mortar.

Tablets, Camphor and Quinine. Contain camphor ¼ grain, with quinine acid sulphate 1 grain. To check catarrh, and as a general tonic.

Spiritus Camphoræ Fortior.

Syn.—RUBINI'S SOLUTION OF CAMPHOR.

Flowers of Camphor 1, Absolute Alcohol (by weight) 1. *Dose* for diarrhœa.—2 to 5 drops on sugar every 5, 10, or 15 minutes, according to the severity of the symptoms.

Trochisci Camphoræ contain 2 grains in each.

Camphoid, a substitute for Collodion.

A solution, 1 in 40, of pyroxylin, in equal parts by weight of camphor and absolute alcohol. May be used as a vehicle for the application to the skin of such drugs as iodoform, phenol, salicylic acid, resorcin, odine, chrysarobin, and ichthyol. Iodoform, dissolves in it to the extent of 1 in 10. The preparation dries in a few minutes, leaving an opaque film, which is not easily washed off.—P.J. 1892,831; B.M.J. i./92,1086.

Acidum Camphoricum, P.G.iv.

Dose.—10 to 20 grains (0·65 to 1·3 Gm.), in cachets.

An acid formed by oxidation of camphor with nitric acid, in odourless crystalline scales, very slightly soluble in water, with a faint aromatic odour, and slight saline camphor taste. Some is formed in "Sanitas" (*v.p.*417).

Used with success in night sweats of phthisis (in 60 per cent. of cases), also in cystitis, and as an intestinal disinfectant. Is eliminated with the urine, which it renders clear and acid, in 2 to 5 hours. Two cases of phthisical diarrhœa, unaffected by other remedies, arrested by three 1-gramme doses.—E. i./92,47; B.M.J. i./92,947; Th. Gaz. 1890,260; M.C. June,97,200; Ed.M.J.1897,45. Cystitis treated by intravesical injections of 2 per cent. aqueous solution, mixed with 11 per cent. of alcohol.—M. 01,28.

Camphora Monobromata, U.S., P.Jap.

Dose.—2 to 10 grains (0·12 to 0·65 Gm.) in pills, with ⅓ of its weight of curd soap and proof spirit *q.s.*

A substitution compound in which one atom of hydrogen in camphor is replaced by bromine. In colourless prisms, soluble in ether, alcohol, and fixed oils, insoluble in water. It has a slight odour of camphor and a turpentine-like taste. It is used as a hypnotic; large doses produce clonic convulsions and muscular trembling.

Epileptic vertigo and cases of petit mal are certainly improved by it.—B.M.J.E. ii./99,24.

Perles are prepared containing 2 grains (0·13 Gm.) in each.

Tablets contain 1 grain (0·065 Gm.).

Elixir Camphoræ Monobromatæ.

Strongly alcoholic and nauseous.

Monobromated Camphor 1, Spirit of Cinnamon (1 in 10) 10; dissolve and add Red Elixir (*v.p.*223) 60, Syrup *q.s.* to 100. *Dose.*—½ an ounce (15 Cc.).

In delirium tremens 7-grain doses often repeated recommended, also in insomnia, chorea, and hysteria.

In whooping-cough of children, 5-grain doses serviceable, and useful in asthma.

Combined with belladonna, useful in enuresis where potassium bromide unsuitable.—Pr. xliii.141; B.M.J. i./89,1463.

In perles, 3 to 6 daily for the vertigo of epilepsy.—M.C. Oct.93,45.

Camphora Salicylata, *Dose.*—1 to 5 grains (0·065 to 0·32 Gm.), in pill, with suet or lard.

Prepared by heating together carefully 84 parts of camphor and 65 parts of salicylic acid, until a liquid homogeneous solution is formed, which becomes a crystalline mass on cooling. This again becomes unctuous when pounded, and liquefies when rubbed on the skin. It may be obtained in definite crystals from a benzol solution. It is slightly soluble in water and glycerin, about 1 in 20 of fats and oils, and is decomposed by hot alkaline solutions. By boiling with water it hydrates into an oily liquid. Applied as an ointment, it was found useful in lupus and rodent ulcers. May prove serviceable in some forms of diarrhœa and to form antiseptic dressings.

CANNABIS INDICA (*Off.*).

The dried flowering or fruiting tops of the female plant of *Cannabis sativa*, grown in India (not deprived of resin). A study of its pharmacology.—B.M.J. ii./99,1354. Work and notes on varieties, Gánjá or Guaza, the masses obtained in European commerce, and Bhang or Hashish consisting of the leaves, small stalks and fruits.—P.J. ii./02,129.

The therapeutic value of the drug is contained in the resin. It appears to contain no peculiar alkaloid. The constituent Cannabinol becomes oxidised on exposure to the air. For use in medicine it should be as fresh as possible.—P.J. i./02,363.

Extractum Cannabis Indicæ (*Off.*).

Dose.—¼ to 1 grain (0·016 to 0·065 Gm.), in pill with lycopodium. Is an alcoholic extract, of which 1 dissolved in 20 of alcohol (90 per cent.), forms

Tinctura Cannabis Indicæ (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.), suspended in some mucilaginous fluid.

Tablets equal 5 minims.

Pilula Extracti Cannabis Indicæ, contain ¼, ⅓, ½ and 1 grain.

Haustus Cannabis Compositus. Vic. Park.

Dose.—1 ounce (30 Cc.).

Tincture of Cannabis, Tincture of Stramonium of each 10 minims, Potassium Iodide, Caffeine Citrate of each 5 gr., Water to one ounce.

For asthmatic attacks and dyspnœa.

Cannabis is useful for chordee and asthma, also as an aphrodisiac, and is successful in migraine.

It is *the* remedy for menorrhagia.—B.M.J. i./83,1002.

For dull continuous headache, the extract is very useful, in doses of ⅓ to ½ grain.—B.M.J. i./87,97.

Should be given in minimum doses, gradually increased.—L. i./90,621. Toxic effects.—L. ii./96,1078.

Cannabis useful in dysmenorrhœa, especially with gelsemium; with nux in incipient delirium tremens nausea, and paroxysmal colic; in menorrhagia, supra-orbital neuralgia, and cough of phthisis. Should be given in small and frequent doses.—Pr. xlv.375; Th. Gaz. 1890,523.

Cannabis of great use in mental worry and restlessness, combined with strychnine, with chloral in chorea, and alone or with ¼ gr. zinc phosphide in migraine.—B.M.J. ii./91,12; Pr. xlvii.140,296.

Aqueous preparations recommended for relief of cough in phthisis.—B.M.J. i./95,300. (Cannabin Tannate might be used.) For whooping-cough, 2 to 5 minims of tincture for children between 2 and 11 years of age, every three or four hours, will prove serviceable.

Poisonous symptoms after two doses of 12 minims each.—L. ii./98,1701.

Cannabin Tannas, Cannabin Tannate.

Dose.—2 to 10 grains (0·13 to 0·65 Gm.), 4 grains being an average dose, taken an hour before bedtime, in a pill with glycerin of tragacanth or in solution of sal volatile and water.

A yellowish brown powder, prepared from *Cannabis Indica.* Tastes like tannin, has a not unpleasant smell, is insoluble in water and ether, slightly soluble in alcohol, and dissolves easily in water made slightly alkaline. It does not produce intoxication, and is said to be a useful hypnotic, that, unlike opium and morphine, rarely or never deranges the digestive and secretory organs, bowels, &c., and is specially valuable in nervous sleeplessness and in acute mania; 8-grain doses produce calm and quiet sleep. Is a valuable remedy for dysmenorrhœa and menorrhagia.

Pilula Cannabin Tannatis contain 2, 3 and 4 grains.

Cannabin Tannate most useful as a hypnotic and in treatment of hysteria, but does not generally replace cannabis.—Th. Gaz. 1890,523; Pr. xlv.375.

Cannabinon. *Dose.*—¼ to 1 grain (0·016 to 0·065 Gm.).

A purified resin, dark brown in colour, and of the consistence of treacle. Has also been used as a sedative to relieve mania, hysteria, and sleeplessness, and is said to be more certain and powerful than the tannate of cannabin. For dispensing purposes, a dilution is made of 1 to 9 of milk sugar. 10 kilograms of cannabis extract yielded 2·2 kilograms of this resin.

Cannabinol. A yellow coloured oil is obtained from this resin by distillation. It is soluble in alcohol, ether, chloroform, and petroleum ether. — L. ii./03,174. For further discourse consult Ph. 112 and xvi.

CANTHARIS (*Off.*).

Syn. LYTTA; SPANISH OR BLISTERING FLY.

Dose.—$\frac{1}{16}$ to ½ grain (0·004 to 0·032 Gm.) in pill. Better given as tincture.

Of this, the dried insect—*Cantharis vesicatoria*—there are the following preparations official:—Acetum, 1 in 10 (of 50 per cent. Acetic Acid); Emplastrum, about 1 in 3; Tinctura, 1 in 80; Unguentum, 1 to 10 of Benzoated Lard; Liquor Epispasticus, 1 in 2 (*v.p.* 149); and Emplastrum Calefaciens, about 1 in 24 (as in B.P. 1885, but Oil of Nutmeg omitted).

For Tinctura Cantharidis, C.U.D. proposes 1 in 10 strength, prepared with Alcohol 70 per cent, which is the strength in most foreign Pharmacopœias. The Cantharidin content could be standardised.—B.M.J. i./03, 29.

Methods of determination—should contain Cantharidin not less than 0·4 per cent.—Y.B.P. 02,51.

Hæmaturia is checked by five-minim doses of tincture of cantharides.—B.M.J. ii./98,1551. Useful in incontinence.—B.M.J. i./01,752.

Mylabris phalerata and *sp.* are official in I.C. Add. for making external applications in India, *v.p.*xxi. These contain about 1 to 2 per cent., or more than double the amount that Cantharides do of the neutral crystalline principle—

Cantharidin, in flat glistening rectangular prisms, which melt at 218° C., and volatilize in very irritating white fumes. It is soluble 1 in 84 of chloroform, 1 in 38 of acetone, and about 1 in 150 of acetic ether. Soluble also in ether, benzene, glacial acetic acid, fats and oils, 1 in 1,000 of absolute alcohol, insoluble in water. Solutions of Cantharidin, as well as other preparations of cantharides, are employed for stimulating the growth of the hair, in alopecia, and preventing its falling off, as in the following preparation:—

Acetum Cantharidis (*Off.*) (*vide p.*147). Might be replaced by a solution of Cantharidin 1 in 2,000 of a mixture of Glacial Acetic Acid 1 with Acetic Acid 19. —P.J. i./98,255.

Linimentum Crinale (Squire).

Cantharidin 1 grain, Acetic Ether 6 drachms; dissolve with a gentle heat, and add Rectified Spirit 3 ounces, Castor Oil 1 ounce, Oil of Lavender 15 minims.

This is too strong to be used freely. It is better to dilute it with an equal quantity of spirit, and the head should be washed after applying it a few times, to prevent the cantharidin accumulating.—L. ii./79,713.

Anodyne Vesicant. Camphor 20, Chloral Hydrate 30, place in a bottle, liquefy by heat of water bath, and add Cantharides 10. Digest at 140° to 160° F. for one hour, and strain with pressure.

Charta Epispastica, B.P. 1885.

Paper spread with a composition of Spermaceti, Olive Oil, Resin, and Canada Balsam, impregnated with Cantharides.

Tela Vesicatoria is a blistering tissue with properties similar to the above.

Collodium Vesicans (*Off.*).

Blistering Liquid 40, Pyroxylin 1,

Dissolve. It evaporates quickly, and its action is confined to the part on which it is painted. It is specially useful to apply to the temple or behind the ear, or other parts of the body where the following preparation would not locate itself.

Might be made the same strength with a solution of Cantharidin 1 in 300, *vide below.*—P.J. i./98,255.

Emplastrum Cantharidis (*Off.*).

Cantharides 7, Yellow Beeswax 4, Lard 4, Resin 4, Soap Plaster 1.

To the melted resin add the soap plaster, then the wax and lard, liquefy, and as the mixture cools sprinkle in the cantharides.

Cantharidin 1 in 1,000 might replace.—P.J. i./98, 255.

Emplastrum Vesicans. U.C.H.

Cantharidin 1, Chloroform *q.s.;* heat to dissolve and add to Yellow Wax, Prepared Suet and Resin, in equal proportions, previously melted together, 499.

Linimentum Cantharidis Comp. West. H. has Liquor Epispasticus 60, Glacial Acetic Acid 20, Rosemary Oil 3, Castor Oil 90, Alcohol 90 per cent. to 480.

Liquor Epispasticus, Blistering Liquid (*Off.*).

Cantharides in powder 1, percolated with Acetic Ether *q.s.* to 2. This preparation and the corresponding Collodion are about double the strength of those in B.P. 1885.

Cantharidin 1 in 300 would be equivalent.—P.J. i./98,255.

Tinctura Cantharidis (*Off.*) 1 in 80.

Dose.—5 to 15 minims.

Might be replaced by a solution of Cantharidin 1 in 10,000 of Chloroform 1 in Alcohol 100.—P.J. i./98,255.

Doses *per os* of 8 minims ($\frac{1}{2}$ Cc.) of a 1 per 5,000 solution of Cantharidin in Tincture of Orange well diluted with water have been found reliable in lupus, and in conjunction with mercury have proved beneficial in syphilis.—B.M.J. ii./02,1231.

Unguentum Cantharidis (*Off.*).

Cantharides, bruised, 1, Benzoated Lard 10, digested at 120° F. for twelve hours, strained, and pressed.

Might be replaced by 1 of Cantharidin in 3,000 of wax and oil basis.—P.J. i./98,255.

Unguentum Cantharidum, P.G.iv. Cantharides 2, Olive Oil 2, Lard 2. Heat 10 hours in steam-bath, add Yellow Wax 1, Turpentine (oleo-resin) 2, Euphorbium in powder 1. For veterinary use.

Unguentum Cantharidin cum Hydrargyro Co. is sold as Pomade Max.

Unguentum Hydrargyri Oxidi Rubri et Cantharidis. W. H. Blistering Liquid 15 minims, Red Mercuric Oxide Ointment to one ounce.

Potassii Cantharidas.

Dose.—$\frac{1}{400}$ to $\frac{1}{200}$ grain (0·00016 to 0·00032 Gm.) hypodermically.

Prepared by heating Cantharidin 10 and Potassium Hydroxide 5¾, in Water 200, to dissolve, and crystallizing by cooling. In minute white needles, soluble 1 in 25 of water.

CAPSICI FRUCTUS (*Off.*).

Dose—½ to 1 grain (0·032 to 0·065 Gm.), in a pill.

The dried ripe fruit of *Capsicum minimum.*

Capsicin. Oleo-Resin of Capsicum, U.S.

Prepared by exhausting capsicum fruit by percolation with ether, distilling off the ether, and pouring the liquid portion of the remainder on a strainer, in order to separate and reject the fatty matter.

Dose.—⅛ to ¼ grain (0·008 to 0·016 Gm.) in a pill.

Emplastrum Capsici, U.C.H.

Oleo-Resin of Capsicum 5, Soap Plaster, melted, 95.

Capsicum plasters in rubber combination are also made in sheets 7 in. by 5 in., and yard rolls 7 in. wide.

Unguentum Oleo-Resinæ Capsici, B.P.C.

Oleo-Resin of Capsicum, U.S.P., 1 ounce, Yellow Wax ½ ounce, Benzoated Lard 4 ounces. Melt the wax and lard, add the oleo-resin and stir until cold. For use as the liniment. Is too strong for tender skins —will bear dilution 3 to 6 times.

Gyrol Pencils. A French specialty possessing the revulsive properties of Capsicum.

Tinctura Capsici (*Off.*). 1 in 20 of 70% alcohol.

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Given internally it increases the flow of saliva and gastric juice. It also increases the peristalsis of the intestine, relieves atonic dyspepsia, and is useful in dipsomania—it allays the craving for alcohol. The official tincture is too weak for external use as a rubefacient.

Tinctura Capsici Ætherea.

Prepared as official tincture, with pure ether *vice* alcohol. Can be applied more freely on account of rapid evaporation, *v.p.*52.—L. i./90,1066.

Tinctura Capsici Fortior, B.P.C.

Dose.—1 to 3 minims (0·06 to 0·18 Cc.). Principally used externally. *Is practically identical with Concentrated Tincture of Capsicum* (Turnbull).

Capsicum in No. 40 powder 1, Alcohol (90 per cent.) *q.s.* to 3.

This is too irritating generally. The writer has found the following approved of:—

Linimentum Capsici.

Capsicum Fruit in coarse powder 10, percolate with Alcohol (90 per cent.) to 70, and add Oleic Acid 10, Oil of Lavender ½. Painted on the skin, or applied sprinkled on piline or lint covered with American oiled cloth, in an hour it produces a red glow; its action may be arrested by smearing the part with vaseline. Useful in chest affections, rheumatism, sciatica, &c. Does not blister or redden the skin, hence may be applied to exposed parts.

Linimentum Capsici Duplex is of double strength.

Liquor Capsici Compositus. Linimentum Capsici Compositum, P. Aus. Add.

Black Pepper 10, Capsicum Fruit 10, Venice Soap 25, Camphor 25, Alcohol 800; macerate 8 days, express, add Oils of Rosemary, Lavender and Clove, of each 5, Oil of Cinnamon 1, and Ammonia Solution (10 per cent.) 200.

Unguentum Capsici (*Off.*).

Capsicum Fruit, bruised, 12, Spermaceti 6 (better 9), Olive Oil 44. Heat on water-bath for 1 hour and strain. Resembles Smedley's Chillie Paste.

CARBONIS TETRACHLORIDUM.

A heavy, volatile, and mobile chloroform-like liquid, has a pleasant pungent, quince-like odour if pure. Sp. Gr. 1·56. The vapour inhaled relieves hay-fever. Employed locally, sprinkled on piline or lint covered with American oiled cloth, it quickly relieves neuralgic pains. Has been used as, but is not a successful anæsthetic.

CARMINUM.

A brilliant red colouring matter prepared from the cochineal insect—*Coccus Cacti.* It is insoluble in water, but entirely soluble in aqueous ammonia. It is not employed therapeutically, but is much used as a colouring agent and for staining histological specimens.

Glycerinum Carmini.

Carmine 3, Distilled Water 3, Solution of Ammonia, B.P. 4; dissolve and add gradually Glycerin 18. Heat in a water-bath till free from ammoniacal odour. When cold add Solution of Ammonia 1 to prevent gelatinisation and Distilled Water *q.s.* to 24. Being nearly neutral it dilutes to a pure carmine colour without a purplish tint.

Carmalum.

Carminic Acid 1, Ammonia Alum 10, Distilled Water 200. Heat to dissolve. Cool and filter. Suitable for staining after osmic acid.—P.J. 1893,264; *cf.* Mayer's *v.p.* 601.

Chloral Carmine.

Carmine 2, Absolute Alcohol 20, Hydrochloric Acid 2. Heat on a water-bath for 30 minutes, and add Chloral Hydrate 25. Cool and filter. For staining pollen nuclei.—P.J. 1893,685.

Liquor Carmini.

Carmine 1, Distilled Water *q.s.* to moisten, Strong Solution of Ammonia 1, dissolve, and add Distilled Water 10.

Used to colour various preparations for the toilet, &c.

Liquor Cocci, Liquid Cochineal.

Cochineal (not bruised), Potassium Carbonate, of each 1, Distilled Water 8. Heat in water-bath for half an hour; gradually add Acid Potassium Tartrate 1, stir well, continue the heat, and add Potash Alum (in powder) 1; heat five minutes more, strain through absorbent wool, and pour over contents of strainer sufficient Distilled Water to make strained product measure 8; when cold add Chloroform ½ per cent, by volume.

CASCARA SAGRADA (*Off.*).

Syn.—SACRED BARK.

The dried bark of *Rhamnus purshianus.*

Dose.—3 to 15 grains (**0·2 to 1 Gm.**) in cachets.

Tschirch has isolated from Cascara a proximate principle anthraglucosagradin, and similar principles from Rhubarb, Senna and Rhamnus.

Emodin and Frangulic Acid are constituents.—Ph.

Cascara bark should be matured before use; it should be kept for a year or two to exhaust the ferment contained in the fresh bark. This moderates the griping action which the fresh bark possesses.

Cascara Capsules (mild) represent half a drachm of Liquid, or 3 grains of Solid Extract. Capsules of double this strength are also prepared.

Dose.—1, 2, or more. The mild are also prepared with 1 grain Euonymin in each in addition. *Dose,* 1 or 2 at bedtime.

Cascarin. A preparation prepared from an extract of the bark by precipitation with Sodium Carbonate. —Le Prince, Comptes Rendus, cxv., 286.

Syrupus Cascaræ Aromaticus (*Off.*).

Syn. **Elixir Cascara Sagrada, B.P.C.,** 1894.

Tincture of Orange 2, Alcohol (90 per cent.) 1, Cinnamon Water 3, Syrup 6, Liquid Extract of Cascara Sagrada 8.

Dose.—½ to 2 drachms (**1·8 to 7 Cc.**). Very small doses three times a day are pleasantly laxative. The taste is agreeably disguised.

Orange, Coriander, Anise, Cassia and Liquorice all mask the unpleasant taste.—P.J. ii./01, 151.

Extractum Cascaræ Sagradæ (*Off.*).

Dose.—2 to 8 grains (**0·13 to 0·52 Gm.**) in pill.—Is now a dry aqueous extract (*Cascara Sagrada* should be indeclinable).

Extractum Cascaræ Sagradæ Liquidum (*Off.*).

Dose.—30 to 60 minims (**1·8 to 3·5 Cc.**).

Is an aqueous extract preserved by the addition of one-fourth its volume of alcohol (90 per cent.). Deposits on keeping, and ferments in hot climates; the writer prefers alcohol (20 per cent.) as a menstruum. With this a more active preparation is formed. It may be made miscible with water by the addition of half its volume of sal volatile.—P.J. 1891,250; 1892,827. Umney suggests 25 per cent. more alcohol to keep it.

Trochisci Cascaræ Sagradæ et Olei Menthæ Piperitæ.

These are made with fruit basis, contain 2½ grains of Extract flavoured with Peppermint, and have a useful purgative and corrective action. *Dose.*—1 or 2.

Mistura Cascaræ. Gt. Orm. H.

Liquid Extract of Cascara, Liquid Extract of Liquorice, Syrup of Orange Peel, Chloroform Water, of each 15 minims for one dose.

Mistura Laxativa, U.C.H. *Dose.*—¼ to 1 ounce.

Liquid Extract of Cascara 1 drachm, Liquid Extract of Liquorice 1 drachm, Sodium Bicarbonate 5 grains, Chloroform Water to 1 ounce.

Extractum Cascaræ Sagradæ Liquidum Insipidum, B.P.C.

Dose.—30 to 60 minims (1·8 to 3·5 Cc.).

The bark in powder mixed with 10 per cent. of Light Magnesia, is made into a paste with Water, and dried, then powdered and percolated with Alcohol (60 per cent.). The first 85 per cent. of percolate is reserved and the remainder concentrated to a soft extract, mixed with the reserved liquid and Alcohol (60 per cent.) *q.s.* to 100.

Extractum Rhamni Purshiani fluidum, P. Aus. Add., is similar.

Vinum Rhamni Purshiani, P. Aus. Add.

Dose.—1 to 3 drachms (3·5 to 10·5 Cc.).

Malaga Wine 150, Gelatin 0·2, dissolved in Distilled Water 2, add Fluid Extract of *P. Aus. Add.* 100, Syrup of Orange Peel 50.

Pastils of Cascara each contain 2½ grains of Extract, and are coated with Tolu. *Dose.*—1 or 2.

Pilula Cascaræ Composita.

Extract of Cascara 1½, Extract of Nux Vomica, Alcoholic Extract of Belladonna, of each ⅛, Milk Sugar 1. In grains for one pill, or in grammes for fifteen.

Dose. – One before dinner or at bed-time.

Is an agreeable and efficient aperient, has certain and gentle action continuing beyond the first day; good for constipation and liver inaction, especially during sea-trips.—B.M.J. ii./93,596.

Syrupus Cascaræ Sagradæ, B.P.C.

Liquid Extract of Cascara Sagrada 4 ounces, Liquid Extract of Liquorice 3 ounces, Carminative Tincture 2 drachms, Syrup sufficient to produce one pint. Mix.

Dose.—As an aperient, 1 to 4 drachms (3·5 to 15 Cc.); or for children, one-half to a teaspoonful, according to age. As a laxative, very small doses should be taken three times a day.

Tablets, plain or sugar coated, 1, 2, 3, 4, and 5 grains.

Dose.—1 or more according to size.

Tinctura Cascaræ Sagradæ.

Percolate 1 to 5 with Alcohol 60 per cent.

Laxative dose.—10 to 60 minims (0·6 to 3·5 Cc.).

Tinctura Laxativa.

Dose.—20 to 60 minims (1·2 to 3·5 Cc.)

Liquid Extract of Cascara Sagrada 2, Aromatic Spirit of Ammonia 2, Spirit of Chloroform 2, Tincture of Belladonna 1, Tincture of Nux Vomica 1. This is an agreeable and elegant form of administering cascara, being perfectly miscible with water; it is a laxative aperient at sea of more than immediate temporary value.—B.M.J. ii./93,596.

Vinum Cascaræ.

Dose.—½ to 1 oz. (15 to 30 Cc.).

Liquid Extract of Cascara 1, Sugar 1, Aromatic Elixir 1, Sherry to 20. Mix and decant from any sediment which may form on standing.

Cascara acts as a vegetable bitter, increases peristalsis, empties rectum, is useful for internal piles, and is a good laxative in habitual constipation.

In obstinate constipation, 20 drops of the liquid extract, 3 times a day, gradually lessened, establishes a habit of regularity; for children smaller doses give good results.—B.M.J. i./83,456; L. i./92,519.

Purgatin. **Anthrapurpurin Acetate.**

Dose.—7½ to 15 grains (0·5 to 1·0 Gm.).

A synthetic oxy-anthraquinone. A tasteless, mild aperient which colours the urine red and stains the linen.—M. 01,153; B.M.J. i./02,1278; L. i./02,1475.

Exodin. *Dose.*—7½ to 24 grains (0·5 to 1·5 Gm.).

A similar oxy-anthraquinone derivative, a yellowish powder with laxative properties.

CAULOPHYLLIN.

Dose.—1 to 4 grains (0·065 to 0·26 Gm.).

A brown resinoid powder obtained from the root of *Caulophyllum thalictroides*—blue cohosh, pappoose, or squaw-root. It possesses diuretic, diaphoretic, and anthelmintic properties, and is used as an emmenagogue, parturient, and antispasmodic. It appears to exert a direct influence on the uterus.

CEREVISIÆ FERMENTUM.

Beer Yeast. B.P. 1885.

Syn. FÆX MEDICINALIS.

Dose.—½ to 1 ounce.

Yeast is in use to add to poultices for application to unhealthy and sloughing wounds. Internally it is given to check the growth of boils, especially when they recur time after time; by some is considered to be a good remedy for diabetes, enabling patients to take more carbohydrates, and has been prescribed for septic endocarditis.

In acne from half a teaspoonful to a tablespoonful of fresh yeast with a little water may be given with meals, and also for boils.—B.M.J.E. ii./02,79.

Yeast dried at 30° C. is recommended in doses of 0·5 Gm. for constipation, given in keratinised capsules and tablets; it is a light grey powder.—P.J. i./01,145.

Levurine, Furunculin, Levuretine, and Zymin are specialties prepared from yeast. **Zymin** is stated to be made by dehydrating yeast by means of acetone; this does not reduce the activity of the enzymes.—P.J. ii./03,547.

Dose of any of the above.—A teaspoonful with meals in beer or sweetened water. These preparations are recommended for cases of septicæmia and carbuncle, boils, and acne.

Marmite is said to be the juice of yeast, which on evaporation yields a brown extract resembling a meat extract in smell and taste.—L. i./03,530.

A modified Fehling Solution has been suggested for detection and identification of these yeast extracts. The efficacy of the test has been disputed (P.J.i./04.86); but is supported (C.D.i.04,216).

Nargol, Mercurol and **Cuprol** are compounds of Nucleinic Acid with respectively Silver (L. ii./00,1742), Mercury and Copper (P.J. ii./00,305). Cuprol is of use in granular ophthalmia (L. ii./01,729) in the form of 5 per cent. instillations, or may be blown into the eye.

Nargol is employed in 5 to 20 per cent. aqueous solution for ophthalmic use, *e.g.*, in ulcerations and inflammation of the conjunctiva.

Nuclein.—*Syn.* **Nucleol.**

Obtained from yeast, is believed to represent the active principles originating from its organic life. This tends to stimulate the formation of white blood corpuscles, and hence to the destruction of the bacilli of disease. Nuclein is considered to be a compound of Nucleinic Acid with albuminates and hydrocarbons.—Med. Ann., 1895, 38,577; 1896, 52,578.

Good results from injections of Nuclein in tuberculous patients.—Ther. Gaz., Jan. 1895, June 1895.

The method of De Backer in the cure of tubercle and cancer.—B.M.J. ii./97,802.

Yeast and Nuclein suggested as a treatment for endocarditis. B.M.J. i./98,936; L. ii./99,1225.

Nuclein Solution 5 per cent. A specialty.

Dose.—10 to 60 minims by mouth or hypodermically.

Liquor Nuclei. A specialty.

Dose.—2 drachms every 3 hours.

Said to be obtained from both animal and vegetable tissues.

Tablets, 1 grain (**0·065 Gm.**).

Septicæmia, obscure cases treated with advantage.—B.M.J. i./00,1342; L. i./00,1591.

Nucleinate of Iron appears to exist in the egg of the domestic fowl (B.M.J.E. ii./02,16), and is recommended for chlorosis.—B.M J.E. i./02,104.

CHLORAL HYDRAS (*Off.*).

TRICHLORETHYLIDENE GLYCOL.

Dose.—5 to 20 grains (**0·32 to 1·3 Gm.**) in aqueous solution, or in chloroform water well diluted.

This compound is obtained by the action of dry Chlorine upon Alcohol. Chloral-alcoholate, the principal product of the reaction is then decomposed with

Sulphuric Acid. Chloral thus produced is hydrated by bringing it in contact with the necessary quantity of water, warming to about 50° C., and allowing it to cool.

In colourless crystals, soluble 3 in 1 of water—1 grain may be held in solution in one minim of aqueous solution. Freely soluble also in alcohol and ether, and 1 in 3 of chloroform, likewise soluble in oils and fats. Chloral Hydrate heated first liquefies, then boils and volatilises without residue; 5 grains may be made into a pill with ½ grain Canada balsam, or with a little syrup and tragacanth. As a hypnotic, it is often combined with opiates or morphine, or bromides, but it is incompatible with quinine. Its use is contra-indicated in heart affections, Bright's disease, and when the vital force is very weak. Poisonous doses are best treated after emetics, &c., with hypodermic injection of strychnine hydrochloride, and inhalations of nitrite of amyl. Picrotoxin $\frac{1}{20}$ grain is said to be enough antidote for 30 grains of chloral.—L. i./91,769.

Antidotes to Chloral.—Emetics, followed by amyl nitrite, coffee, electricity, oxygen, picrotoxin, or strychnine.

CAUTION.—Mixtures containing chloral hydrate with a bromide and alcohol must be carefully dispensed. Chloral alcoholate is apt to separate in concentrated solutions.—P.J. i./04,215.

It is useful as an antidote to poisoning by strychnine, and as a remedy for tetanus. A solution of chloral possesses powerful antiseptic properties, and an addition of 3 per cent. to hypodermic injections of cocaine or morphine preserves them and lessens the danger of their administration.

Tetanus, recovery from, under large doses of chloral.—Pr. xlvii.132; B.M.J. ii./01,475.

Severe chorea successfully treated.—L. ii./89,205.

Preparations.

Chloral Camphoratum, B.P.C. (Pigmentum Chloral et Camphoræ, T.H.)

Chloral Hydrate 1, Flowers of Camphor 1.

Rub together in a warm mortar until completely liquid and filter. It remains permanently liquid at ordinary temperatures, and forms a valuable application painted on painful parts in neuralgia and rheumatism. It mixes freely in alcohol, ether, oils, and fats, but not with water or glycerin: the camphor is precipitated on its addition to these. The compound (Chloral and Camphor) dissolves the alkaloids atropine, morphine, and veratrine to the extent of 1 in 30 or more, but their salts are less soluble in it. Liquefactions of a similar kind take place on mixing and gently heating respectively

Menthol 1, Chloral Hydrate 1.
Phenol 3, Chloral Hydrate 1.
Thymol 1, Chloral Hydrate 1.

Quinine salts and chloral hydrate also form liquid combinations.

Pigmentum Chloral Compositum.—W. H. has Chloral Hydrate 1, Menthol 1, Thymol 1, Camphor 3.

Chloral Tannin.—Mix Chloral Hydrate 1 with Tannin 1, melt together on a water bath. Is used in the form of

Chloral Tannin Solution—*Syn.* CAPTOL.

Stir in whilst hot to 2 parts of the above, water 8. Is used for strengthening the hair. -P.J. ii./99,148.

Liquor Bromo-Chloral Compositus, B.P.C.

Dose.—½ to 2 drachms (1·8 to 7 Cc.). 1 drachm contains 10 grains each of Chloral Hydrate and Potassium Bromide.

Chloral Hydrate 1600 grains, Tincture of Indian Hemp 400 minims, Tincture of Fresh Orange Peel 400 minims, Henbane Juice 1600 minims, Syrup 3¾ ounces, Liquid Extract of Liquorice ½ ounce. Dissolve, add Potassium Bromide 1600 grains dissolved in Distilled water 7 ounces, filter, and add Distilled water to 20 ounces.

Resembles the American specialty **Bromidia.**

For the analysis of a large number of **Patent Medicines,** *vide* L. ii./03,1492.

Suppository of Chloral.

Chloral Hydrate 5, Oil of Theobroma 10. In grains, for one suppository, in grammes, for fifteen.

Pound together and press into the mould. Heat must not be applied, or the mixture will not set firm. It is useful in infantile convulsions, where nothing can be administered by the mouth. It should be forcibly retained for a few minutes with the finger, if necessary. It is locally irritating.

Syrupus Chloral (*Off.*). *Dose.*—½ to 2 drachms (1·8 to 7 Cc.). Contains 10 grains in 1 drachm.

Chloral Hydrate 80 grains, Distilled water 1½ drachms. Dissolve and add Syrup *q.s.* to 1 ounce.

Tablets of Chloral, 5 and 10 grains (0·32 and 0·64 Gm.), *to be dissolved—not to be swallowed whole. Dose.*—1 or more.

Chloralamide.—*Syn.* CHLORAL FORMAMIDE, **P.G.**

Dose.—15 to 45 grains (1 to 3 Gm.). in weak spirituous or acidulated solution.

In colourless inodorous shining crystals with a faintly bitter taste; soluble about 1 in 20 of water, 1 in 2 of alcohol. Should not be heated over 120° F., or it is decomposed. It is incompatible with alkalies.

Recommended as a hypnotic, specially suitable in neurasthenia, spinal affections, and heart disease. Has no analgesic action, and has proved unsatisfactory in phthisis. An increase of dose is not required by continued use. Undesirable effects are less frequent and less marked than from chloral, but action is less rapid.

Useful in nervous affections, mania, and the insomnia of phthisis and typhoid.

Chloralimide.

Dose.—20 to 45 grains (1·3 to 3·0 Gm.).

A white crystalline compound soluble in alcohol, but only slightly in water. Is used to relieve headache and induce sleep.

Elixir Chloralamidi. *Dose.*—1 ounce (30 Cc.) = 30 grains (2 Gm.).

Chloralamide 2 Gm., Alcohol 5 Cc., Aromatic Syrup 5·4 Cc., Glycerin 15 Cc., Water *q.s.* to 30 Cc.

Haustus Chloralamidi, G.H.

Chloralamide 30 grains, Mucilage Mixture (*v.p.*86) to 1 ounce, for one dose.

Chloralamide renders breathing slower, quickens heart action, and produces nervous excitement, ending in sleep.—B.M.J. ii./90,50.

Successful in insomnia, no disagreeable effects. Tolerated for weeks in one case, once 30 grains failed on ninth night.—Report of Therapeutic Committee, B.M.A. —B.M.J. ii./90,237; Pr. xlv.216; P.J. 1890,104.

Results in insomnia without pain reliable, but not reliable with acute pain. No after depression, no interference with temperature or digestion, no craving induced; tolerance not readily reached. Giddiness and headache sometimes followed.—B.M.J. i./91,1060; Th. Gaz. 1891,418; M.C. Jan. 1892,251; Pr. xlvii.274.

Tablets, 5 grains (0·32 Gm.). *Dose.*—3 or more.

Chlorobrom.—Under this name a specialty containing 30 grains each of chloralamide and potassium bromide in an ounce, flavoured with liquorice, is recommended for insomnia and sea sickness.

Dose.—½ to 1 ounce. —L. i./92,517; B.M.J.i./92,1329; L. i./95,90.

For sea-sickness, Chloralamide and Potassium Bromide 15 grains each, flavoured with tincture of orange and chloroform water, valuable. Does not interfere with digestion or temperature.—B.M.J. ii./93,596.

Chloralose. *Syn.* ANHYDRO-GLYCO-CHLORAL.

Dose.—3 to 10 grains (0·2 to 0·65 Gm.), in cachet.

In small white crystals, formed by the action of chloral on glucose; slightly soluble in water, with bitter taste. Is a useful hypnotic, inducing restful and dreamless sleep without irritation of stomach or intestines, or other disagreeable after-effects. Is less successful in pains of gout or neuralgia.—P.J. 1893,609; 1894,621,1005; B.M.J.i./93, 1233; B.M.J.E. i./93,15,99; ii./93,104; Pr.l.214,378.

Effect not cumulative, well borne by stomach, admissible in heart disease, highly successful in relief of insomnia from mental disturbance.—B.M.J.E. ii./93,75; ii./94,3.

Some cases of ill-effects have followed its use, especially in large doses.—Pr. lii.98; P.J. 1894,735; B.M.J. ii./93, 233,490; B.M.J.E. ii./93,91. May cause somnambulism.—M.C. Sept. 94,449; Pr. liii.8. Poisonous symptoms followed one dose of 20 centigrammes.—L. ii./95,684. Also from single dose of 8 grains.—L. ii./00,1803.

Somnal. *Syn.* ETHYLISED CHLORAL-URETHANE.

Dose.—30 to 45 minims (2 to 3 Cc.).

This is a solution of Chloral Urethane in Alcohol, and is said to be an efficient soporific.

CHLOROFORMUM (*Off.*).

Syn. TRICHLORO-METHANE; FORMYL TERCHLORIDE.

Dose.—1 to 5 minims (0·06 to 0·3 Cc.), in mucilage and water, or in a perle; 3 drops = 1 minim. Small doses may be given as chloroform water or spirit of chloroform.

Acetone Chloroform specially prepared for anæsthesia, is for convenience kept in one-quarter, one-half, and one pound amber-coloured, stoppered bottles.

This well-known anæsthetic is soluble in all proportions in absolute alcohol, pure ether, fixed and volatile oils, and 1 in less than 200 of water (this should not give a greasy stain to the bottle). It does not mix with glycerin. It is a solvent of mastic and most resins, many alkaloids, iodine, bromine, and of phosphorus and sulphur sparingly. It also dissolves gutta-percha and india-rubber. It acts on india-rubber even when vulcanized. Chloroform, according to the Pharmacopœia, has Sp. Gr. 1·490 to 1·495, boils between 60° and 62°C., and contains about ½ per cent. by weight of ethyl hydroxide (alcohol), which prevents its decomposition. In B.P. 1885 it had Sp. Gr. 1·497 and was said to contain more alcohol. Absolute Chloroform has Sp. Gr. about 1·5002 at 15°C.; boils at 61°C.; it decomposes on exposure to sunlight and air, with formation of free chlorine and of carbonyl chloride or phosgene; the addition of alcohol is sufficient to check this change if kept cool, away from sunlight, and in full stoppered bottles. If shaken with one-tenth its volume of sulphuric acid for 20 minutes, neither the acid nor the chloroform should be more than faintly tinged, nor should the acid, if separated and diluted with three volumes of water, develop more colour or disagreeable odour. On further dilution with five volumes of water, this liquid should still remain transparent and colourless, and the addition of silver nitrate solution to it or to water which has been shaken with the separated chloroform, should cause no further opalescence. It leaves no residue or unpleasant odour during or after spontaneous evaporation. If chloroform be shaken with twice its volume of distilled water, the latter should not redden litmus; with solution of silver nitrate or baryta water it should cause no turbidity; nor should zinc iodide and starch paper be coloured by its vapour, the liberation of iodine indicating decomposition and the presence of chlorinous compounds. Of these, carbonyl chloride is unaffected by shaking with mercury, which combines with free chlorine. The presence of alcohol in chloroform protects it by combining with the decomposition products, rendering them innocuous (chlorine is converted into hydrochloric acid)* ; the addition of ¼ per cent. by weight to absolute chloroform produces Sp. Gr. 1·497, but if more be added it makes the Sp. Gr. too low to guarantee its original purity,—if 1 per cent. be added the Sp. Gr. is reduced to 1·4854.—P.J. 1892, 229 ; 1893, 792, 1005, 321 ; 1894, 630. Chlorine cannot be detected until sufficient has been produced to combine with all the added alcohol.—P.J. 1895, 836. Chloroform is now largely prepared by the action of chlorinated lime on acetone, as well as from both methylated and duty-paid alcohol.

The addition of slaked lime as a means of purifying decomposed Chloroform, found unsuccessful, while a trace of alcohol acts as a perfect preservative.—P.J. ii./98, 669 ; B.M.J. i./01, 678.

Pictet's process for purifying Chloroform consisted of fractional crystallisation and distillation under reduced pressure at a low temperature.

A death after anæsthesia from chloroform, nitrous oxide gas and oxygen.—L. i./99, 1095.

Antidotes.

In syncope from Chloroform inhalation, **Amyl Nitrite** from a capsule restores respiration and circulation.

The sudden application of a large cloth dipped in boiling water to cardiac region in threatened death through syncope from chloroform anæsthesia has proved successful in restoring animation.

If one-fourth of a grain of morphine be first injected hypodermically less Chloroform is needed, the insensibility is more profound, and the danger attending its use is lessened.

Vegetable and animal infusions and decoctions can be preserved indefinitely by the addition of 1 minim of Chloroform to the ounce of liquid, if vessels containing it be well closed. The Chloroform should be mixed with double its volume of rectified spirit before adding it to the fluid to be preserved.

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* Thus, instead of Hydrochloric Acid and Carbon Oxychloride, there are formed trichloral and various esters of Hydrochloric Acid. The alcohol is first oxidised to aldehyde by the chlorine, free hydrochloric acid being formed. The aldehyde combines with the free chlorine, forming finally trichloraldehyde. The hydrochloric acid combines with the alcohol, as long as the latter is in excess, to form esters.—P.J. ii./03, 326.

Resuscitation from Chloroform syncope by inversion of the body, certainly saved patient.—B.M.J. i./81,559; i./96,1398; L. ii./92,949.

Unpleasant effects from decomposition of vapour by flame of artificial light in confined space.—Pr. xlii.418; B.M.J.E. ii./90,6; Ed. M.J. 1890,392; L. ii./98,1401; i./99,1727; B.M.J. ii./98,1621.

Report of the Hyderabad Commission.—L. i./90,149.

The conclusions of Sir Lauder Brunton on the Commission.—B.M.J. ii./91,1088; L. ii./95,20,84,143.

Discussion on the treatment of anæsthetic emergencies.—B.M.J. i./98,377; L. i./01,1041.

Note on mode of dying during chloroform anæsthesia —L. i./98,329; B.M.J. i./02,951.

Remarks on 6,600 administrations at London Hospital.—L. i./98,623,722.

Report on action of Chloroform.—It lowers blood pressure and weakens heart's action. Causes dilatation of heart, but causes no change in rate of action. Cardiac failure occurs from sudden enfeeblement and dilatation, not from complete cessation of rhythm, sometimes before respiration stops, but generally after. Artificial respiration unsuccessful because heart too weak to take advantage of the fresh air. Ether does not cause cardiac dilatation before abolishing conjunctival reflex. Slowing influence of Chloroform on heart is indirect, through vagus nerves. Lowering of blood pressure, when not excessive, is protective. Changes in respiration are most dangerous, especially from easy breathing to deep and rapid respiration. Free dilution with air gives no security against an overdose, on account of change in breathing. This is often induced by sensory stimulation, such as operative interference, too strong vapour, etc.—(MacWilliam).—B.M.J. ii./90,831,890,948.

Suggested to give a dose of strychnine by mouth or hypodermically previous to Chloroform inhalation to lessen risk of cardiac or respiratory paralysis.—B.M.J. ii./91,1044,1147; P.J. 1891,454; M.P.C. 94,575.

With due care the use of Chloroform is certainly quite as safe as ether, while its effects are infinitely less disagreeable to the patient both during and subsequent to inhalation (Lombe Atthill).—B.M.J. i./92,110; Reply by Lawrie, 651.

Lawrie states that only risk to heart is endangering nutrition by interference with respiration.—L. i./93, 289,745; ii./93,24,482.

Report of the Lancet Commission on Anæsthetics.—Chloroform is a comparatively safe body, but not in any case devoid of risk. Heart failure preceded cessation of respiration in great majority of cases.—L. i./93,629, 693,761,899,971,1111,1236,1479.

Chloroform inhalation combined with morphine hypodermically in acute maniacal delirium.—L. i./93,861.

Small doses of chloroform inhaled cause more fatal results than the free use.—B.M.J. i./95,891.

On the mechanism of death from chloroform.—L. ii./97,656; B.M.J. i/99,468,661,762,881.

Inadvisable to continue the general use of chloroform, seeing that its death-rate is 1 in 2,300 cases, while A.C.E. is 1 in 5,000, ether 1 in 13,500, and nitrous oxide almost nil.—B.M.J. ii./97,160.

Death from drinking an ounce.—L. ii./97,384; 2 ounces.—B.M.J. ii./02,1122.

Recovery under strychnine after drinking two ounces. —B.M.J. ii./97,1498.

Danford Thomas' scheme for reporting on deaths from chloroform.—L. i./00,1811.

Dr. James Edmunds on safety in administration.—L. i./00,227,339,421.

Report of Anæsthetic Committee Brit. Med. Ass.—B.M.J. i./01,163. Criticisms on.—B.M.J. i./01,441,447. Further report on.—L. i./01,961,1159, *et seq.*

By the aid of Vernon Harcourt's "Chloroform regulator," the exact percentage of chloroform used is gauged; never more than 2 per cent. is necessary.—L. i./03,800.

Recent deaths under.—B.M.J. i./01,540; i./02,369, 562,1317; i./03,195,253,287,1458; ii./01,753,1887; L. i./01,197,584,1615,1844; ii./01,105,177,248; i./02, 323,1502; ii./02,1353; i./03,592.

Some deaths are from fright.—B.M.J. i./03,446.

Narceine injected before chloroform anæsthesia.—L. i./02,1504.

Anæsthetic Preparations of Chloroform.

Glass Capsules of Chloroform.

Encased in cotton wool and silk; contain 10 minims in each. Are convenient for use in asthma, &c.; may be fractured and used by the patient while in bed. Also containing 20, 30, and 60 minims,—the last for obstetric purposes, avoiding risk of overdose.

Gelatin Capsules of Chloroform.

Contain each 5 minims; are for similar uses, but the chloroform is apt to volatilise.

Capsules of Chloroform with Ethyl Iodide, *v.p.*59.

A.C.E. (Alcohol, Chloroform and Ether).

Absolute Alcohol, Sp.Gr.0·795	1	volume.
Chloroform, Sp. Gr. 1·497...	2	,,
Purified Ether, Sp. Gr. 0·720	3	,,

The mixture has Sp. Gr. about 1·01.

The three ingredients are intended to be mixed in such proportions that, when the quantities of each taken separately are exposed to the air in watch glasses, they shall completely evaporate in the same time. It is held they will, from this mixture, evaporate uniformly.

Experiments with this mixture show that its rate of evaporation is nearly in accordance with this view, although separately the three ingredients vaporised spontaneously, during two trials of 5 and 25 minutes, from a dish exposing the same surface of liquid, in the proportions of Absolute Alcohol 1, Chloroform 2·5, Purified Ether 8 (all by volume). The results of evaporating the A.C.E. mixture (1, 2, and 3), having Sp. Gr. 1·007, to half its weight, were:—

(1) Evaporation with agitation at 60° to 70° F. gave a residue of Sp. Gr. ... 1·077

(2) Evaporation with agitation at 60° to 70° F. gave a residue of Sp. Gr. ... 1·074

(3) Spontaneous evaporation at 30° to 40° F. gave a residue of Sp. Gr. ... 1·073

On further testing the residues by washing out the alcohol they were found to consist approximately of Absolute Alcohol 1 volume, Chloroform 2·2, Ether 1·8. This would tend to show that the Ether in the mixture vaporises at 60° F. in a somewhat greater ratio than the formula anticipates. By increasing the quantity of

Ether it passed off even more quickly,—4 and 5 volumes in place of 3 were tried,—while from a mixture of Alcohol 1, Chloroform 2, Ether 2, of Sp. Gr. 1·063, the vapour still contained more than its due proportion of Ether, although its residue when evaporated to half its weight at 60° to 70° F. had Sp. Gr. 1·094; thus it did not vary so much as the mixture of Alcohol 1, Chloroform 2, and Ether 3.

Further experiments on evaporation of A.C.E.—B. & C.D. i./00,467.

The mixture should be added drop by drop on an open mask to ensure uniformity.—L. i/95,577.

This mixture is of great service in midwifery, where complete anæsthesia is not required.

In Vienna, a modification consisting of Alcohol 3, Ether 3, and Chloroform 10, all by weight, was used at the General Hospital.

A.C.E. is as effective as pure Chloroform, and a safer agent when deep and prolonged anæsthesia is to be produced, while at the same time it is sufficiently rapid in its operation to be convenient for general use, although it takes a longer time than Chloroform (10 to 15 minutes) to procure anæsthesia.—Medico-Chirurgical Transactions, xlvii.341,343.

Gave typical Chloroform (sphygmographic) tracings. Report of Hyderabad Commission.—L. i./90,158.

Safer than Chloroform and quicker than ether.—L. i./79,788; i./82,328; i./92,709.

Chloroform 16, Ether 1 (vols.), recommended; antidote—hypodermically ether and strychnine.—L. i./98,1534.

Deaths under administration of A.C.E. — B.M.J. i./95,282; L. i./92,1323; i./96,1151; i./98,249; ii./01,607.

Death-rate calculated to be 1 in 5,000 administrations.—B.M.J. ii./97,160.

General Preparations of Chloroform.

Internally Chloroform is an antispasmodic and sedative. On account of its agreeable taste it is often added to nauseous medicines, in the form of Spirit of Chloroform, to disguise their taste, and to prevent decomposition.—P.J. 1887,315. Externally it produces a local anæsthesia, and is added to liniments to aid their absorption and to allay pain in neuralgia. Large doses of chloroform may be taken into the stomach, without causing death. For recovery after drinking an ounce, see Ed. M.J. Dec. 1887, 523; a tablespoonful not dangerous. —B.M.J. i./86,786; Th. Gaz. 1886,20.

Aqua Chloroformi (*Off.*).—1 in 400 of water.
Dose.—½ to 2 ounces (15 to 60 Cc.).
Salts, like sodium sulphate, are apt to cause deposition of chloroform from aqueous solution.

Chloroformum Camphoratum, B.P.C.
Camphor 2, Chloroform 1.
Useful for toothache, applied on cotton wool.

Chloroformum Mastiches.
Mastiche 1, Chloroform *q.s.* to 2.

Linimentum Chloroformi (*Off.*).
Chloroform 1, Liniment of Camphor 1.
Vaseline might with advantage replace the oil of the camphor liniment for this preparation.

Oleum Chloroformii, P.G. iv.
Chloroform 1, Olive Oil 1.

Liquor Chloromorphiæ, **Chloromorphia Solution.** (*Miscible*).

		Contains in a 10 minim dose :—
Chloroform	150	1½ minims.
Glycerin	400	4 minims.
Liquid Extract of Liquorice ...	100	1 minim.
Morphine Hydrochloride ...	10	$\frac{1}{11}$ grain.
Solution of Atropine Sulphate	20	$\frac{1}{5}$ minim.
Oil of Peppermint ...	2	$\frac{1}{50}$ minim.
Alcohol (90 per cent.) *q.s.* to	1000	

Dissolve the Morphine Hydrochloride in the Liquid Extract of Liquorice, Glycerin and Atropine Solution previously mixed; in part of the Alcohol dissolve the Chloroform and Oil of Peppermint; mix with the morphine solution, and add Alcohol *q.s.* to 1000.

Dose.—5 to 15 minims (0·3 to 0·9 Cc.). Is a homogeneous mixture, and useful sedative, more nearly resembling the secret remedy, Chlorodyne, in active constituents, than the official Tinctura Chloroformi et Morphinæ Composita.

Capsules (gelatin) containing 5 minims for use of travellers are convenient.

Tinctura Chloroformi et Morphinæ Composita (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

			Contains in a 10 minim dose:—
Chloroform	...	75	¾ minim.
Morphine Hydrochloride	...	10	$\frac{1}{11}$ grain.
Diluted Hydrocyanic Acid	...	50	½ minim.
Tincture of Capsicum	...	25	¼ minim.
Tincture of Indian Hemp	...	100	1 minim.
Oil of Peppermint	...	1·5	$\frac{1}{66}$ minim.
Glycerin ...	...	250	1¼ minims.
Alcohol (90 per cent.) *q.s.* to	...	1000	

Mix.—Contains about four times the proportion of morphine present in the preparation of B.P. 1885.

Hydrocyanic acid is not now a component of chlorodyne.—P.J. 1892,490.

Poisoning by 4 ounces of Chlorodyne, with recovery by use of atropine, strychnine, and stimulants.—L. ii./90,670. Another case.—L. ii./96,1456; i./98,1686.

Perles of Chloroform contain about 3 minims (0·18 Cc.). in each. *Dose.*—1 or 2.

Spiritus Chloroformi (*Off.*).—*Syn.* Chloric Ether. 1 in 20 of alcohol (90 per cent.).

Dose.—30 to 40 minims (1·8 to 2·4 Cc.), or 5 to 20 minims (0·3 to 1·2 Cc.) repeated.

Emulsio Chloroformi St. Th. H. U.C.H.

Chloroform 8, Tincture of Quillaia 3 (or Tincture of Senega 1), water to 160. Shake to emulsify. Is used instead of the Spirit of Chloroform, 10 to 15 minims to the ounce to preserve mixtures containing vegetable infusions and the like.

Tinctura Chloroformi Composita, B.P.C. (B.P. 1885).

Chloroform 2, Rectified Spirit 8, Compound Tincture of Cardamoms 10. *Dose.*—5 to 60 minims (0·3 to 3·5 Cc.).

CHRYSAROBINUM (*Off.*).

Syn. Commonly but erroneously called CHRYSOPHANIC ACID.

Dose.—$\frac{1}{6}$ to ½ grain (0·01 to 0·032 Gm.) or more.

A substance containing a varying proportion of chrysophanic acid, obtained from Araroba (*v.p.* 171.) by extraction with hot chloroform.

Pure chrysarobin is a tasteless and colourless dull orange yellow powder, but can be obtained by sublimation in bright shining yellow needles. It is contained in Rhubarb root (principally as Chrysophanic Acid), Dock root, and the Yellow Wall Lichen, but commercially it is prepared from Araroba by exhausting with hot chloroform, filtering and allowing the Chrysarobin to crystallise out. It is not soluble in weak solution of potash, but by the action of a stronger solution of this alkali in contact with the air it dissolves and is converted into potassium chrysophanate, from which true chrysophanic acid may be separated by the action of a mineral acid. Pure Chrysarobin is not, like Chrysophanic acid, soluble in aqueous ammonia.

Chrysarobin is soluble in water only slightly; slightly soluble in ether, and partially soluble in petroleum spirit. It may be made into pills with glycerin of tragacanth.

Used externally, chrysarobin is a powerful stimulant and parasiticide in many skin affections. It has also been administered internally for psoriasis, but even in half-grain doses it purges the patients so much, that as a rule its use cannot be persevered in to produce a cure.

Unguentum Chrysarobini (*Off.*).

Chrysarobin 1, Benzoated Lard 24. Triturate, mix, heat to dissolve as much as possible, and stir till cold. Unguentum Chrysarobini, U.S., is 1 in 10 of benzoated lard.

Chrysarobin ointment has been used as a successful remedy in acne rosacea, psoriasis, lupus, ringworm of the scalp, pityriasis, and tinea circinata. For some forms of eczema and other skin affections a milder ointment should be used—5 to 10 grains to an ounce. The drug should be dissolved in the fat. It stains the skin and hair, and a strong ointment after three days' continued use sometimes produces feverishness and irritation, accompanied by discoloration of the skin beyond the parts to which it has been applied. These stains can be removed by benzol, or a weak solution of potash or chlorinated lime.

Unguentum Chrysarobini Compositum (Unna).

Chrysarobin 5, Salicylic Acid 2, Ichthyol 5, Vaseline 88. —M.C. Sept. 1890, 522; B.M.J. i./90, 1090; i. 93, 785.

Pigmentum Chrysarobini.—*Adopted by G. H.* Chrysarobin 1; Solution of Gutta Percha (B.P. 1885), 9.

Traumaticin, composed of Gutta Percha (purified) 1, Chloroform (by weight) 9, is also used for making the above pigment. A cleanly application,—prevents soiling of bed linen and underclothing.

Pigmentum Chrysarobini et Pyrogallol.

Chrysarobin 1, Pyrogallol 1, Ether and Alcohol, of each 10; Collodion 120. Apply after bathing every third day. In the form of a paint is recommended for psoriasis; and for ringworm.—B.M.J.E. i./04,16.

Chrysarobin may also be applied by means of Camphoid, *v.p.*143.

Araroba. *Syn.* Goa Powder (*Off.*). Crude Chrysarobin.

A concretion obtained from the cavities in the trunk of a leguminous tree, *Andira Araroba,* dried and powdered.

Crude Araroba is imported from Brazil. About 80 per cent. of its weight consists of chrysarobin, or chrysophanic acid so-called. It is at first light yellow, but turns brown and purplish by exposure, and oxidises into *true* chrysophanic acid. The Indian mode of using the drug was to cut a lime fruit, dip it in the powder and dab it on the affected skin. The Brazilians mix it with vinegar.

Unguentum Araroba.

Goa Powder 1, Glacial Acetic Acid 1; rub together and add Lard 14. This is an effective application for use in scaly skin diseases.

Eurobin, Chrysarobin-Acetate. A brownish powder recommended as a substitute for chrysarobin. Solutions of 2 to 3 per cent. are said to be effective and free from toxic effects, non-irritant, and do not stain.

Lenirobin, Chrysarobin-triacetate, is also prepared.

Chrysarobin is a powerful local stimulant; not, however tending towards vesication or ulceration; curative properties best shown in psoriasis; is an undoubted parasiticide, especially in ringworm of the body and tinea versicolor.

Cases of tinea circinata have been cured in a week by Goa powder ointment, but it is not so successful in tinea tonsurans.

In ringworm, 7 grains to 1 ounce of chloroform applied thrice daily useful; sinks in deeply.

CIMICIFUGÆ RHIZOMA (*Off.*).

The rhizome and rootlets of *Cimicifuga racemosa* *Actæa racemosa*, Linn.), black snakeroot or black Cohosh. Indigenous to the United States and Canada.

Cimicifugin.

The powdered resinoid substance of a yellowish brown colour obtained from black snakeroot.

Dose.—1 to 6 grains (0·065 to 0·4 Gm.) in pill, a a nervine tonic and antispasmodic, given for rheumatism, chorea, amenorrhœa, and to excite contraction o the uterus.

Extractum Cimicifugæ Liquidum (*Off.*).

1 = 1 of Cimicifuga exhausted with 90% alcohol.

Dose.—5 to 30 minims (0·3 to 1·8 Cc.).

Tinctura Cimicifugæ (*Off.*).

Syn. TINCTURA ACTÆÆ. 1 in 10 of 60% alcohol.

Dose.—30 to 60 minims (1·8 to 3·5 Cc.), or 5 minim every hour.

Very useful in chronic rheumatism where one part of tendon, muscle, or articulation is exquisitely painful, o where the disease is traceable to previous uterine affection; also in lumbago, sciatica, pleurodynia, and headache from fatigue.

In chronic rheumatism and obscure nerve-pains, als in lumbago very valuable in dose of 30 minims twice o three times a day.

A certain anodyne in dysmenorrhœa, and increase the flow in scanty menstruation, also beneficial i menorrhagia and metrorrhagia.—Pr. xlviii. 265.

CINCHONÆ CORTEX.

The principal dried barks used for the productic of the salts of the Cinchona alkaloids are :—Red Cinchoı bark, from *Cinchona succirubra;* Yellow Cinchoı bark, obtained from *Cinchona Calisaya;* pale Cinchoı bark (crown or Loxa bark), from *Cinchona officinali* the bark of *Cinchona lancifolia*, Mutis, and other species of Cinchona; that of certain species of Remijia may also be used. The only kind official for making galenical preparations is the cultivated Red Cinchona, *v.p.* 174.

The sources of the principal "barks" of commerce may be tabulated as follows:—

I.	C. officinalis, *var.* α, Condaminea „ „ β, Bonplandiana „ „ γ, crispa	yielding	crown bark.
II.	C. succirubra (Pavon),	yielding	red bark.
III.	C. nitida C. micrantha C. Peruviana	„	grey bark.
IV.	C. Calisaya	„	yellow bark.
V.	C. lancifolia C. cordifolia	,	Columbian bark.
VI.	C. Pitayensis	„	Pitayo bark.
VII.	Remijia Purdieana „ pedunculata	„	Cuprea bark.

The Quinine barks, as they are called, now imported from South America, are chiefly the Calisaya in quills; those known as Cuprea barks, the produce of species of Remijia, are rarely now imported. A much larger quantity of cultivated bark, the produce of *C. succirubra*, *C. officinalis*, and hybrids, arrives from Madras and other parts of India; most of the rich Java bark, produced by *C. Calisaya*, *var. Ledgeriana*, now goes direct to Amsterdam or Hamburg. The old natural "flat" Calisaya bark is not now met with, but a kind of yellow bark, pressed into flat pieces, is imported from Bolivia to replace it. The flatness is produced by tight packing in serons bound with green hide thongs which, contracting, keep it flat.

The alkaloid Cinchonidine, although often found associated with quinine in Cinchona, is generally absent from Cuprea barks, and in some the alkaloid Cupreine, nearly allied to quinine, has been found; its salt, Cupreine Sulphate, is in light feathery crystals. An alkaloid named Cinchonamine is also contained in *R. Purdieana*. Hydroquinine, another cinchona alkaloid, discovered by Hesse, is associated with and nearly allied to quinine; it possesses similar chemical properties to the latter, but has two additional atoms of hydrogen in its molecule.

The cultivation of the Cinchonas is carried on in India, in the Nilgiri Hills in the south, and near Darjeeling in the north-east, also in Ceylon, Java, and Jamaica.

The species *C. succirubra* has proved to be the hardiest and most easily propagated, and, although on analysis the yield of cinchonidine and quinidine generally preponderates over that of quinine, yet the total yield—often 5 to 10 per cent.—of alkaloids from the bark of this Cinchona is very large (especially in the hybrids with C. officinalis); latterly the proportion of quinine in it has increased.

By far the largest proportion of the barks worked for quinine is Java *Ledgeriana* bark, all derived from the packet of seed obtained from one great tree by the Indian Manuel, and brought over by Ledger, which cost the Dutch Government £50 and Manuel his life. Of this bark Java produces nine to ten millions of pounds per annum, average test 5 per cent. of sulphate of quinine, exceptional samples testing 10 to 12 per cent. Much smaller quantities of *Calisaya* from South America, *Officinalis* from India and Ceylon, and *Succirubra* from India, Ceylon and Java, are also used, the latter being sought after by manufacturers of Pharmacopoea Germanica II Quinine, which allows 10 per cent. or thereabouts of Cinchonidine (Howard).

Acidum Quinicum, Kinic Acid. *v.p.*435.

Cinchonæ Rubræ Cortex, Red Cinchona Bark. (*Off.*). *Dose.*—5 to 60 grains (0·32 to 4 Gm.).

The dried bark of the stem and branches of cultivated plants of *Cinchona succirubra*. Tested by official process, it should yield between five and six per cent. of total alkaloids, of which not less than one-half should consist of quinine and cinchonidine.

Preparations of Red Bark.

Decoctum Cinchonæ. B.P. 1885.—1 produced 16. Half this quantity of bark yields a preparation of equal alkaloidal strength. *Dose.*—1 to 2 ounces (30 to 60 Cc.).

Elixir Cinchonæ.

Dose.—$\frac{1}{2}$ to 1 drachm (1·8 to 3·5 Cc.).

Liquid Extract of Cinchona 1, Simple Elixir 7. Mix and filter.

Extractum Chinæ. P.Aus.Add.

Dose.—1 to 4 grains (0·065 to 0·26 Gm.).

A cold water percolate, inspissated.

Extractum Cinchonæ Liquidum (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

This contains 5 per cent. of total alkaloids, and is an acid preparation of bark; 1 equals about 1 of bark. In the 1867 B.P. **Extractum Cinchonæ Flavæ Liquidum** yellow bark was percolated with cold distilled water *only*, the percolate concentrated to Sp. Gr. 1·2, and one-third its volume of rectified spirit added; it then had Sp. Gr. 1·1; this menstruum failed to exhaust the bark—even approximately.

Liquid extract of red bark has been much lauded in America for giving drunkards a distaste for alcohol.

A modified official assay process which is claimed to give good results.—P.J. ii./01,90.

Infusum Cinchonæ Acidum (*Off.*).

Dose.—½ to 1 ounce (15 to 30 Cc.).

Red bark in No. 40 powder 1, in boiling distilled water 20, with aromatic sulphuric acid ¼; infuse one hour and strain.

Acetic acid 10 per cent. recommended as a liquid menstruum for cinchona bark.—P.J. ii./99,45.

Mistura Ferri Aromatica, B.P, 1885. *Syn.* **Heberden's Ink.**

Dose.—1 to 2 ounces (30 to 60 Cc.).

Red Cinchona Bark 4, Calumba Root 2, Cloves 1, Iron Wire 2, Peppermint Water 48. Macerate 3 days, filter and add Peppermint Water *q.s.* to 50. Then add Compound Tincture of Cardamoms 12, Tincture of Orange Peel (dried) 2.

Tinctura Cinchonæ (*Off.*).

About 1 in 5 of 70% alcohol; standardised to contain about 1 per cent. of alkaloids.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Tinctura Cinchonæ Composita (*Off.*).

Syn. HUXHAM'S TINCTURE OF BARK.

About 1 in 10 of 70% alcohol.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Vin de Quinquina au Malaga (Codex).

May be made with red bark 3 parts in 100 of Malaga wine.

Dose.—1 to 4 drachms (3·5 to 15 Cc.) for children.

Vinum Chinæ, P.G. iv. *Dose.*—1 to 4 drachms.

Red Bark 1 in 25 of Sherry detannated by Gelatin and flavoured with Sugar and Tincture of Orange.

Vinum Chinæ ferratum. P. Aus. Add.

Dissolve Gelatin 1 in Water 20, add to Malaga Wine 1000; then add Iron and Quinine Citrate 5 dissolved in Water 20. Set aside 8 days, filter and preserve in wine bottles kept from the light.

As to the relative value of the Cinchona alkaloids, two Commissions, one in Bombay, the other in Madras, have reported that Quinine keeps its long-maintained and acknowledged supremacy. Next in value is Quinidine; then follow Cinchonidine and Cinchonine; of the last two, the former is preferable, but dearer, the latter being nauseous and liable to cause derangement to the stomach. The proper relative doses are of Quinine 3 grains, Quinidine 5 grains, and Cinchonidine and Cinchonine 7 grains each.

Methods of assaying Cinchona Bark and Extracts.—P.J. i./03,268; Y.B.P., 1902,55,56.

CINCHONIDINÆ SULPHAS.

Dose.—1 to 10 grains (0·065 to 0·65 Gm.).

In silky white needles, generally smaller than quinine sulphate, obtained from some cinchona barks. Although isomeric with cinchonine, its solution is lævogyrate, like that of quinine, but it does not produce the emerald green colour with chlorine water and ammonia The sulphate is soluble 1 in 50 of alcohol, 1 in 100 o water, rendered more soluble in water by addition o acid—a minim or more of diluted sulphuric acid to grain—may be dispensed thus, or 5 parts with 1 o glycerin of tragacanth in pills. Taste bitter.

In intermittent fevers, malaria, and neuralgia Cinchonidine has a distinct value of its own.

Cinchonidine Salicylate is useful as a toni and antiperiodic in neuralgia, rheumatism, sciatica, &c. 5 grains every 2 hours in pills or cachets.

CINCHONINA.

Dose.—1 to 10 grains (0·065 to 0·65 Gm.).

An amorphous white powder, as met with in commerce, obtained from Cinchona barks, isomeric wit cinchonidine, but solutions of its salts are dextrogyrate. Being insoluble in cold water, and requiring 2,500 of boiling water to dissolve it, is recommended in the following form as a tasteless febrifuge for children:—

Pulvis Cinchoninæ Compositus.

Cinchonine 12, Sodium Bicarbonate 1, Milk Sugar 60.

Dose.—3 to 12 grains (0·2 to 0·8 Gm.).

Cinchoninæ Hydrochloridum.

Dose.—1½ to 10 grains (0·1 to 0·65 Gm.), or more.

In white acicular crystals, very like quinine sulphate, soluble 1 in 1·3 water and 1 in 24 of alcohol 85 per cent.

Cinchoninæ Sulphas.

Dose.—1½ to 10 grains (0·1 to 0·65 Gm.), or more.

In hard, colourless, short rhombic prisms, with a vitreous lustre. Soluble 1 in 54 of cold water, 1 in 7 alcohol 90 per cent. Cinchonine salts are much the cheapest of the alkaloidal salts of Cinchona. Their nauseous, bitter taste is objectionable. They are given in doses one-third larger than quinine and for the same purposes; as prophylactics some have thought them superior to quinine. The hydrochloride is the salt most convenient for use. May be dispensed in aqueous solution, or in pills, 5 parts with one of glycerin of tragacanth.

For coryza and respiratory catarrh five-grain doses have been found useful.

Cinchoninæ Iodosulphas.—*Syn.* ANTISEPTOL.

This odourless brown powder has been used as a substitute for iodoform. It contains 50 per cent. of iodine, and is soluble in alcohol and chloroform, insoluble in water.

Cinchonine Sulphocarbolate.—In reddish white needles. Cinchonine Sulphocresotate (amorphous) and **Acid Hydrochloride** are new salts with antiseptic properties.—Y.B.P., 1902,57.

Cinchoninæ Tannas.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

A yellow amorphous powder, very slightly soluble in water.

Cinchoninæ Tartras.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

In crystalline condition, soluble 1 in 33 of water.

COAL TAR DERIVATIVES.

Of the aromatic series of derivatives from coal tar, now so freely used as antipyretics and analgesics, it is said that they all produce changes in the blood, diminishing its respiratory capacity and destroying red corpuscles. —L. i./93,377.

Solutions of Coal Tar.

An alcoholic preparation known as *Liquor Carbonis Detergens* owes its properties in part to Phenol.

As a lotion, from 1 drachm to 1 ounce to a pint of distilled water forms a yellowish milky emulsion; or, as an ointment, Liquor Carbonis Detergens 1, Unguentum Hydrargyri Nitratis 3, Unguentum Simplex 4. Useful in prurigo and chronic scaly skin diseases.

The following will also be found useful in eczema, Liquor Carbonis Detergens 2, Liquor Plumbi Subacetatis 2, Zinci Oxidum 4, Glycerinum 4, Aqua 36.

Balneum Picis Carbonis. St. John's Hosp.

Solution of Coal Tar 8 ounces, water 95° F. 30 gallons.

Lotio Plumbi Detergens, V.C.H.

Liquor Carbonis Detergens 1, Liquor Plumbi Subacetatis Fortior 2½. One teaspoonful to be added to a pint of water.

Unguentum Picis et Acidi Salicylici, V.C.H.

Liquor Carbonis Detergens 30 minims, Salicylic Acid 15 grains, Ammoniated Mercury 5 grains, Soft Paraffin to 1 ounce.

Liquor Picis Carbonis, Solution of Coal Tar (*Off.*).

Prepared Coal Tar (*Pix Carbonis Præparata* (*Off.*).—Coal Tar (prepared by heating in a shallow vessel, at 120° F. for one hour, stirring frequently), 1, Tincture of Quillaia (1 in 10 of 90% alcohol) 5. Digest at 120° F. for two days, cool, and decant or filter.

Lotio Picis Carbonis Alkalina. St. Th. H

Liquor Picis Carbonis 1 drachm with Sodium Bicarbonate 120 grains in water to 1 pint.

Liquor Picis Carbonis et Ligni.

Dissolve Wood Tar 1 in 20 of official liquor above.

Liquor Picis Ligni may be prepared by dissolvin Wood Tar 1 in 20 of above Tincture of Quillaia.

The tincture of quillaia enables these solutions form emulsions with water. One part to 7—20 is useful for various skin affections as a lotion.

Anthrasol. A distillate from Coal Tar of the consistence and colour of Olive Oil. Has been used in skin affections.

Creolin Pearson.

A dark-coloured liquid antiseptic, said to contain 20 per cent. of Cresylic Acid, with neutral Hydrocarbon Oil and Resin Soap.

Cyllin Medical.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

Is a dark alkaline liquid prepared from coal tar, said to contain 60 per cent of a new analogue of Phenol, which is neither caustic nor toxic, forming a white emulsion with water, and is recommended as a deodorising antiseptic. For lotions, 1 to 100 to 500 of water.

As ointment for erysipelas, eczema, and scabies.—May contain 5 per cent· with Adeps Lanæ.

Lotio Creolin. St. Th. H. Cyllin 1, Glycerin 8, water to 160.

Cerettes. Are arrow-shaped gelatin capsules containing Cyllin ointments or dusting powders.

Cyllin Surgical Soap 10 per cent

Capsules 5 minims, and **Plaster** 5 per cent. are prepared.

Izal (**Medical**). A proprietary name.

A white emulsion of oxidized hydrocarbons, obtained from coal oil, containing 40 per cent. of Izal oil; used as a non-poisonous disinfectant and antiseptic. May be used 1 in 200 of water. It is destructive to *Bacillus coli* and other organisms. This and **Capsules** 2 to 10 minims with Cod Liver Oil 5 minims are an effective and cheap remedy in phthisis.—L. i./02,146.

Capsules of **Izal** (plain) 2 minims and **Izal** 2 minims **with Cod Liver Oil** 5 minims are supplied.

Doses of 3 minims, in conjunction with Bismuth Subnitrate and Chloromorphia Solution, have given good results in dysentery.

Izal Fluid, containing the same amount of impure Izal Oil, is also supplied.

Kelvolin.

A dark-coloured oily fluid, with slight tar-like odour. Contains 40 per cent. of the homologues of Phenol, and contains no free alkali. Has strong germicidal properties, even when considerably diluted. Applied to the skin it has a marked penetrative power, and a softening action on incrustations. Has been used applied on cotton wool, and vaporised in the treatment of sepsis of the middle ear.—L. i./04,369.

Liquor Cresoli Saponatus, P.G. iv.

Equal parts of crude cresol (cresylic acid, *v.p.* 11) and potash soap.

Aqua Cresolica. **P.G. iv.** One part of above to 9 of distilled or common water.

Lysol. A German specialty.

A dark-coloured alkaline liquid, obtained by the saponification of cresols, and containing the higher homologues of phenol. It is soluble in all proportions of water, forming a gelatinous mixture with small quantities, and is said to be a stronger antimycotic and less poisonous than phenol. Incompatible with acids. A useful disinfectant.—B.M.J.E. i./92,99.

In lupus, applied daily or every other day, useful, but painful.—B.M.J. ii./91,598. One per cent. solution recommended in aural practice and midwifery.—B.M.J.E. i./91,173; Th. Gaz. 1892,64. For otorrhœa.—B.M.J.E. i./03,44.

On fatal cases of Lysol poisoning in children.—B.M.J.E. ii./98,63; ii./01,73.

Death after rectal injection of an ounce and a half.—B.M.J. ii./00,1498.

Acetanilidum, Acetanilide. (*Off.*).—*Syn.* PHENYL-ACETAMIDE (ANTIFEBRIN).

Dose.—1 to 3 grains (0·065 to 0·2 Gm.) or more, in cachets or suspended in water by compound tragacanth powder.

Prepared by the action of glacial acetic acid on aniline. In small white odourless glittering crystals, which produce a burning sensation on the tongue, and melt at 236·5° F. (113·5°C.). It is soluble 1 in 200 of water, 1 in 4·2 of alcohol 90 per cent., and is neutral in its reaction. Is soluble 1 in 20 of brandy with difficulty. It is used as a febrifuge and antipyretic, hypnotic sedative, anti-epileptic, anti-arthritic, and nervine tonic.

Tablets, 3 grains. *Dose.*—1 or more.

Tablets of Acetanilide, 3 grains with **Caffeine** 1 grain are useful in migraine.

Effervescent Acetanilide. *Dose.*—1 drachm.

This is prepared in two strengths, 1 and 3 grains in 1 drachm.

Checks the chills and fever of phthisis, quiets the nervous system, and improves the well-being—Pr.xxxviii.447.

Relieves the darting pains of locomotor ataxy.—L. i./87,41. Successful in sciatica.—Pr. xlii.131; B.M.J. i./89,374. Useful in enteric fever.—Pr. xliv.14.

Advantages over antipyrine; smaller dose, steadier action, and less danger from collapse.—B.M.J.ii./88,979.

Toxic effects of two 4-grain doses quickly repeated in a girl of 13; faintness, palpitation, and cyanosis.—L.i./89,1157. Other cases.—B.M.J. ii./89,601; i./90, 288; L. i./90,575,816,1135; Pr. li.248.

In small repeated doses regulated temperature in typhoid and phthisis. Caution against large doses.—B.M.J.E. ii./90,59; B.M.J. i./91,172, 684.

A good and safe antipyretic, best given with brandy, in enteric fever, pneumonia, and tuberculosis.—B.M.J. i./91,284.

For otitis and otorrhœa, useful as insufflations.—Semaine Médicale, 99,392; 02,160.

Death following use of headache powders, found to contain 4 to 10 grains acetanilide in each.—P.J. ii./96,14.

Death from two acetanilide headache powders.—B.M.J. i./98,1539. Risks of such headache powders, discussion.—B.M.J. ii./98,434. Toxic symptoms from one headache powder.—B.M.J. ii./98,987.

Pulvis Acetanilidi Compositus, B.P.C.

Dose.—3 to 5 grains.

Acetanilide 7, Caffeine 1, Sodium Bicarbonate 2. Their action resembles ' Daisy ' powders.

Ammonol (designated also "Ammonium - Phenyl-Acetamide").

Dose.—5 to 20 (?) grains (**0·32 to 1·3 Gm.**).

A white powder, imperfectly soluble in water, contains acetanilide, sodium bicarbonate and ammonium carbonate. Also supplied in **Tablets** of 5 grains.

Antinervin. A specialty, reported to be a mixture of salicylic acid, potassium bromide, and acetanilide. —P.J. 1891,1169.

Monobromacetanilide.—*Syn.* MONOBROMPHENYL-ACETAMIDE; ANTISEPSIN. A bromine substitution compound of acetanilide, in white acicular tasteless crystals. Suggested for facial neuralgia, neuritis, and rheumatism, in dose of 3 to 15 grains (0·2 to 1 Gm.).—B.M.J.ii./88,183.

Two cases of cyanosis from its use.—B.M.J. i./90,357.

In doses of $\frac{5}{8}$ grain reduced temperature of phthisis, slowing pulse, but not respiration. Used also as an antiseptic, and in suppositories ($\frac{1}{2}$ grain), for hæmorrhoids.—L. i./90,1266; M.P.C. i./90,330; Th. Gaz. 1890,416.

Phenalgin. Said to be 'Phospho-ammonio-phenyl-acetamide.' *Dose.*—5 to 20 grains (0·3 to 1·3 Gm.).

A mixture with antifebrin as the active base.

A white powder insoluble in water, but soluble in most organic solvents; recommended as a substitute for opium, and as an antipyretic: has antimalarial and hypnotic properties.—P.J. i./99,449.

Tablets and **Gelatin (Hard) Capsules**, $2\frac{1}{2}$ grains each.

Acetophenone.—*Syn.* HYPNONE; PHENYL-METHYL ACETONE.

Dose.—$1\frac{1}{2}$ to 5 minims (0·1 to 0·3 Cc.) suspended in almond emulsion, or with mucilage or syrup and peppermint water, or in **Capsules of Hypnone** with oil, which contain $\frac{3}{4}$ minim of Hypnone in each. Hypnone is a colourless liquid at ordinary temperatures, but crystallizes below 50° F. in white needles. Has a strong odour of almond and orange blended. Is insoluble in water, but soluble in alcohol, ether, and oils. As a hypnotic, is said to be useful in nervous affections, and simple insomnia without pain; its administration requires care, as its action is somewhat uncertain.

Has been used with some success internally to promote chloroform anæsthesia.

Is of no value in insomnia.—L. i./86,369; L. i./87,391.

Anilin.—*Syn.* MONO-PHENYLAMINE, ANILIN OIL.

An almost colourless (when freshly prepared), mobile, oily liquid, with a faint vinous odour and aromatic burning taste, soluble in alcohol, ether, and oils, slightly in water. It darkens in colour by keeping (*v.p.*623).

Anilin-Iodoform.

Dissolve Iodoform 1 in Anilin Oil 10 (by weight).

Anilin-Cocaine.

Dissolve Cocaine (base) 5 in Anilin Oil 100 (weight). These are employed in aural treatment.

Anilin Sulphate.

Dose.—½ to 3 grains (0·032 to 0·2 Gm.).

Has been used for emphysema and asthma; must be used cautiously, as it may cause cyanosis.

Acidum Sulphanilicum.

Dose.—5 to 10 grains (0·3 to 0·6 Gm.).

In small white crystals, slightly soluble in water. Is used in Ehrlich's Diazo Test, *v.p.* 622.

Has been employed to relieve iodism, catarrh, laryngitis, and otitis. Is analgesic, and is best given as

Sodii Sulphanilas.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

In white shining scales, easily soluble in water.

Useful in acute catarrh.—L. i./95,49.

Amygdophenin.

Dose.—8 to 15 grains (0·52 to 1 Gm.) in cachet.

A compound of para-amidophenol and amygdalic acid, analogous to phenacetin. Is in small white crystalline plates, slightly soluble in water and alcohol. Useful in rheumatic fever and neuralgia, but of little value as an antipyretic.—B.M.J.E. ii./95,99; P.J. i./96, 162.

Anthrarobin. A light brownish yellow powder, darkening with age, obtained by reduction from alizarin. It is a powerful deoxidising agent, sparingly soluble in chloroform and ether, but readily so in alcohol or weak alkaline solutions.

It has been used with success in psoriasis, in the form of an ointment, containing from 5 to 10 per cent.—Pr. xlii.56; P.J. 1883,346. Caused smarting, and slow in action.—Y.B. 1890,300.

Is best applied as a tincture, after rubbing the parts with soft soap or soap liniment.

Benzanilide.—*Syn.* Phenyl-benzamide.

Dose.—3 to 12 grains (0·2 to 0·8 Gm.).

In small white shining scales, odourless and tasteless; insoluble in water, soluble 1 in 60 of alcohol. It is obtained by the action of benzoyl chloride on aniline, being chemically and therapeutically similar to acetanilide. Has been found specially useful for children.—P.J. 1888,425 (ex Apot. Zeit.); Y.B. 1890,301.

A simple antipyretic with little other influence on the course of a disease.—B.M.J.E. ii./92,59.

Benzol. (*Off.*).—*Syn.* **Benzene.**

Dose.—5 to 10 minims (0·3 to 0·6 Cc.), in capsule or oily solution.

A mixture of homologous hydrocarbons obtained from light coal tar oil.

It contains about 70 per cent. of Benzene and 20 to 30 per cent. of Toluene.

Sp. Gr. 0·880 to 0·888. Crystallizable and purified by sulphuric acid and redistillation. Has been used internally for cough, and whooping-cough, and in influenza.

Benzol quickly destroys pediculi capitis or pubis, applied freely; one application generally sufficient.—B.M.J.E. i./92,3. Also parasite of itch.—B.M.J.E. i./93,20.

For seborrhœa, brushed on the skin.—P.J. i./01,132

This body is entirely distinct from **Petroleum Benzine** or **Benzoline,** a product distilling over between 60° and 90° C. in the fractionation of the hydrocarbons in Shale. Petroleum Ether (*v.p.*396.) and Benzine are used for heating cauteries for nævi, &c.

Toluol, Methyl-Benzene, and **Xylol, Dimethyl-Benzene** have chemical and physical properties allied to Benzol.

Chinolinum, Chinoline.

Dose.—3 to 10 minims (0·18 to 0·6 Cc.).

A transparent, colourless, strongly-refracting, mobile, oily liquid, with a peculiar odour, soluble in alcohol, but insoluble in water. May be prepared by the oxidation of nitro-benzene and aniline.

Chinolini Tartras.

Dose.—5 to 15 grains (0·32 to 1 Gm.) in chloroform water, with syrup of orange, or in cachet.

This salt is most recommended for use. It is, when pure, in odourless, glistening, white acicular crystals, nauseous in taste, and soluble about 1 in 40 of water.

Chinoline Salicylate is less soluble than the above.

Chinoline tartrate is a powerful germicide and antiseptic. A one per cent. solution completely destroys the coagulability of blood, and weaker solutions render sterile, propagating fluids. Therapeutically, it is a powerful antipyretic in enteric and intermittent fevers, useful in periodic neuralgia, and as a local antiseptic.

Used in diphtheria, as a pigment.—Pr. xxix.447.

Chinosol.

The potassium salt of a compound of oxychinoline and sulphuric acid, in yellow, minutely crystalline powder, readily soluble in water; not affected by albumen, but precipitated by alkalis. Used as a surgical dressing, the alkaline secretions of wounds appear to set free oxychinoline, which acts as an oxidiser and disinfectant.—L. i./96,557; B.M.J. i./96,285; P.J. i./96,82,484; L. ii./97,25. A 2 per cent. solution checks surface hæmorrhage.—B.M.J.E. ii./01,60.

Tablets containing 5, 8 and 15 grains are prepared. One of the latter dissolved in a pint of water is said to be equal to Phenol Solution, 1 in 40, as an antiseptic.

A crude form is prepared for veterinary use.

Phthisis—15 grains daily given internally.—L. ii./97, 1432. Other cases relieved.—L. ii./99,90,181,238.

A satisfactory moist antiseptic dressing for a scald.—L. i./98,762.

Injected into the veins of rabbits in a research on intravascular antisepsis.—L. i./03,98.

Exalgin.—*Syn.* METHYLACETANILIDE.

Dose.—½ to 1 or 2 grains (0·032 to 0·13 Gm.). In colourless acicular or tabular crystals, with a slight saline taste. Soluble 1 in 60 of water, freely so in alcohol.

Mistura Exalgin.—*Dose* 2 to 4 drachms (**7 to 15 Cc.**).

Exalgin 1, Tincture of Orange 4, Syrup of Orange-Flower 12, Water to 96.

Pilula Exalgin.—1 and 2 grains in each.

Tabellæ Exalgin.—½ grain (**0·032 Gm.**) each, with chocolate.

Tablets, compressed, contain ½ and 1 grain (**0·032 and 0·064 Gm.**).

It possesses chiefly analgesic properties, is useful in neuralgia of all forms, causing no irritation or rash. Also possesses antipyretic and antiseptic properties. In toxic doses causes impulsion, trembling, and paralysis of respiratory organs. Is eliminated by the urine, the quantity of which, and of sugar when present, is reduced. Incompatible (chemically) with salicylic acid.

Has been used successfully in locomotor ataxy, migraine, neuralgia, chorea, sciatica, and herpes.

Is an antipyretic, but only in unsafe doses.—B.M.J.E. ii./90,15; B.M.J. i./91,63.

A marked anodyne, with but slight influence on high temperatures.—L. ii./90,845; B.M.J.E. ii./92,28.

In 4-grain doses, of marked benefit in nervous headache, facial and intercostal neuralgia, and lumbago; also in Graves' disease.—L. i./92,1173,1175.

For hypodermic injection; Exalgin 10, Sodium Salicylate 11, Water 100, useful.—P.J. 1894,814.

A valuable analgesic for neuralgic pains, with but slight and rare unpleasant effects. Reduced number of epileptic fits in one case.—L. i./93,785; ii./93,1304.

Eight grains cause fainting and sense of dying, but rapid recovery.—B.M.J. i./98,1518.

Fluoresceïn.—Resorcin-phthalein Anhydride.

In yellowish red crystalline powder, sparingly soluble in water, more so in presence of an alkali; showing a most intense green fluorescence.

Alcoholic solution, a useful indicator in acidimetry, especially for ammonia.—P.J. i./01,424.

Liquor Fluoresceinæ, R.O.H. Fluoresceïn 2 and Sodium Bicarbonate 3 in 100. Useful to diagnose corneal lesions. The normal cornea is not stained, but ulcers and parts denuded of epithelium take a green colour, which persists for 2 or 3 hours. Loss of substance in conjunctiva is denoted by a yellow coloration.—L. i./91,447.

'**Sterules**' (*v.p.* 487) are prepared of the above solution, and are cleanly in use.

Sodium-Fluorescein.—*Syn.* URANIN. A brownish-yellow powder, soluble in water, with green fluorescence. **Tablets** contain $\frac{1}{250}$ grain (0·00025 Gm.) for the diagnosis of corneal ulcers.—B.M.J. ii./98,489.

Fuchsine.—Rosaniline Mono-Hydrochloride.

Syn. MAGENTA; ROSEINE.

Dose.—½ to 4 grains (0·032 to 0·26 Gm.), in a pill, with glycerin of tragacanth.

In brilliant iridescent crystals, forming a deep-red solution in water. Fuchsine is much used for staining the bacillus tuberculosis for microscopic examination.—*Vide* Bacteriological Notes, *p.* 616.

Has been given in renal albuminuria. Must be arsenic-free.

Gallanol.

A compound of tannin aniline in small white crystals slightly soluble in water. Soluble in alcohol, but not in chloroform. Used in place of pyrogallol or chrysarobin in psoriasis and eczema as powder or ointment.

Kryofin. *Dose.*—3 to 8 grains (0·2 to 0·52 Gm.)

A compound of paraphenetidin and methylglycolic acid, in minute, white, shining, granular crystals, odourless, and with slight saline taste; soluble about 1 in 800 of water, more soluble in alcohol. Recommended as an antipyretic and anti-neuralgic.—B.M.J.E. i./97,83; ii./97,88; P.J.ii./97,5; B.M.J. ii./97,814; L. ii./97,728; Y.B.1898,456.

Kyrogenin.—*Syn.* META-BENZAMINE-SEMICARBAZIDE.

Dose.—3 to 24 grains (0·2 to 1·5 Gm.)

A crystalline body soluble about 1 in 100 of water and about 1 in 25 of alcohol 90 per cent. Has antipyretic properties, and has been used in phthisical affections, and is claimed to be of use for the pyrexia of phthisis.—B.M.J.E. i./03,32.

Lactophenin.—*Syn.* LACTYL-PHENETIDIN.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

A compound of lactic acid and phenetidin, in small white crystals, tasteless, soluble 1 in 330 of water. Differs from phenacetin in containing a molecule of lactic acid in place of acetic. Is an analgesic, given with good results in neuralgia, migraine, and articular rheumatism, and as an antipyretic in typhoid, scarlet fever, influenza, and other zymotic diseases.—B.M.J. ii./98,1055. Insomnia of insanity, good results.—B.M.J.E. ii./98,12.

Malakine.—*Syn.* SALICYL-PARA-PHENETIDIN.

Dose.—60 to 90 grains (4 to 6 Gm.) daily, in divided doses, in cachets.

In small light yellow needles, insoluble in water, slightly soluble in alcohol. Useful as an anodyne in neuralgia, headache, and especially in acute rheumatism. As an antipyretic, action is slow and even, and free from after effects.—P.J. 1893, 507; ii./96, 39; B.M.J.E. ii./93,92.—B.M.J. ii./98,1055.

Methylene Blue.—*Syn.* TETRAMETHYLTHIONINE CHLORIDE. *Dose.*—1 to 4 grains (0·065 to 0·26 Gm.); hypodermically, 1 grain.

An aniline derivative in dull dark green crystals, forming an intense blue solution in water; purified from zinc chloride, used in its manufacture. May be given in

Cachets containing 1 to 4 grains,
Pills containing ½, 1, and 2 grains, or
Capsules containing 2 grains (0·13 Gm.).

Has been recommended as an analgesic, of service in rheumatism, migraine, neuralgia, and painful nervous affections; has also been used in malarial fever, ague, nephritis, and retinitis, with varying results. Colours urine blue, and fæces acquire blue colour on exposure to air.

The ulcers in stomatitis can be greatly improved by dusting on or by a solution—the pain is relieved. A weak Eau de Labarraque or Liquor Sodæ Chlorinatæ (*Off.*) is useful to remove the colour in the membrane.

Cystitis, the 2 grain capsules should be given combined with washing out the bladder with 2 per cent. solution.

In dysentery a rectal injection 1 in 5,000. In chronic suppurative otitis media is employed in 500 solution warm is instilled.—M.A. 1904,28.

Methylene Blue Test for the permeability of the kidney. 1 Cc. of 1 in 20 solution is injected into the gluteus maximus and the urine passed is of pale green colour.

The Phlorizin Test consists in injecting 5 mgr. of phlorizin (*v.p.*535) subcutaneously in 20 to 30 minims of water. Glucose should normally appear in the urine in half-an-hour.—M.A. 1904,461, 462.

Internal use may cause cystitis.—L. i./98,611.

Recommended internally for gonorrhœa.—B.M.J. i./97, 140; P.J. i./97,405.

Severe neuralgia of the spermatic plexus cured. —P.J. ii./98,435.

Relieves neuralgias, but produces vomiting, diarrhœa, strangury and dyspnœa.—B.M.J. ii./98,1055.

Enemata 1 to 2 per cent. in warm water have been used in dysentery.—P.J. ii./00,703.

Hysteria improved by pills of; also ozœna and ophthalmia treated by 0·25 per cent. solutions.—M 01,126.

On malarial parasites has a destructive action.—B.M.J.E. i./01,104.

Has proved of value in malaria, and also in bilharzial disease, producing sedative effects. **Chrysoidin** (diamido-azo-benzene hydrochloride) suggested also for trial where other dyes have failed.—L. i./03,1664.

Neurodin.—*Syn.* ACETYLPARAOXYPHENYLURETHANE.

Dose.—5 to 15 grains (**0·32 to 1 Gm.**).

In colourless, odourless crystals, slightly soluble in water. Recommended as an antipyretic and antineuralgic. —P.J. 1894,731; Pr. lii.214; B.M.J.E. i./94,12. Feeble, but harmless.—B.M.J. ii./98,1055.

Orexine Tannate. *Dose.*—4 to 8 grains (**0·26 to 0·52 Gm.**) in cachets. An insoluble greyish-white powder, with properties of the above, but without taste or odour; assists digestion, and is specially useful internally for children. Should not be given with iron preparations.

Tablets 4 grains with chocolate are made, also **Pills** 8 gr

Orexine base is discontinued.

Acts as a stomachic and appetiser, stimulating gastric secretion, useful for sea and railway sickness.—B.M.J.E. ii./92,51; i./93,88; ii./98,40; B. & C. D. ii./99,474.

Stimulating effect rarely found; result consists only in irritation of mucous membrane of stomach. Unless well diluted, vomiting often occurs.—M.C. Jan. 1892,237. —B.M.J.E. ii./92,67.

Phenacetinum. (*Off.*) PARA-ACET-PHENETIDIN.

Dose.—5 to 10 grains (**0·32 to 0·65 Gm.**), in cachets, tablets, or suspended in mucilaginous fluids.

An acetyl compound of Phenetidin (the ethylic ether of paramidophenol). It is analogous to acetanilide (antifebrin). It is in white, shining, laminar crystals, inodorous and tasteless, sparingly soluble in water, soluble 1 in 20 of alcohol (90 per cent.), insoluble in acid or alkaline solutions.

Doses of 4 to 8 grains reduce temperature in cases of pyrexia, but effects are only of short duration.

Effervescent Phenacetin.

Dose.—1 drachm (**4·0 Gm.**) or more.

This is prepared in two strengths, containing respectively 5 and 10 grains in 1 drachm.

Tablets, 4, 5 and 10 grains. *Dose.*—1 or more.

Tablets of Phenacetin 4 grains (**0·26 Gm.**), and Caffeine 1 grain (**0·065 Gm.**), are prepared and are useful in migraine; also **Tablets of Phenacetin** 2½ grains (0·16 Gm.), and **Sulphonal** 2½ grains (0·16 Gm.)

Reduces temperature and soothes pain; causes no rash or cyanosis. Successful in rheumatism, neuralgia, migraine, and hysteria.

Phenacetin useful in rheumatism, especially acute articular form; 4 doses of 15 grains, or 2 of 30 grains generally successful.—M.C. April, 1890,33; Th. Gaz. 1890,474.

Useful in some cases of pyrexia of phthisis.—B.M.J. i./91,684.

Of great service in first stage of influenza; relieves headache and mitigates aching of limbs.—B.M.J. i./91, 1282,1383.

Three doses of 15 grains each caused poisonous symptoms.—Pr. li. 131,249. Also from three doses of 8 grains.—B.M.J. i./96,146

Has a notable freedom from injurious action.—B.M.J. i./94,90.

Phenacetinum cum Caffeina Effervescens, B.P.C.

Dose.—1 to 2 drachms.

Contains 5 per cent. Phenacetin and 2½ per cent. Caffeine Citrate.

Citrophen.

Dose.—3 to 8 grains (0·2 to 0·52 Gm.).

A combination of citric acid with paraphenetidin, in white, minutely crystalline powder, slightly soluble in water, with a pleasant taste; antipyretic and antineuralgic.—B.M.J.E. i./96,87; L. i./00,36; B.M.J. ii./98,1056.

Phenazonum, **Phenazone** (*Off.*).—*Syns.* ANALGÉSINE, PHENYL-DIMETHYL-ISO-PYRAZOLONE. *Commonly known as* ANTIPYRINE.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.) in cachets, tablets, or aqueous solution.

Is in pearly white crystalline scales or powder, bitterish in taste, soluble 1 in less than 1 of water, about 1 in 1 of alcohol and chloroform, and 1 in 40 of ether. Gives a deep red colour with solution of ferric chloride, which is nearly discharged by diluted sulphuric acid. It is an analgesic, febrifuge, and hæmostatic, reduces the temperature of fevers, including typhoid, scarlet, relapsing, puerperal, and hectic, and subdues the pyrexia of pneumonia, pleurisy, phthisis, and erysipelas. In doses of 4 to 15 grains it relieves locomotor ataxy, migraine, facial neuralgia, and sea sickness. Hypodermically for lumbago, sciatica, angina pectoris, biliary and renal colic, and dysmenorrhœa. A skin rash of purple patches has at times been observed after its use; the urine is not discoloured.

Peppermint water or essence disguises its taste. It may be administered as an enema if contra-indicated by the mouth. Is incompatible with spirit of nitrous ether, or other nitrites in the presence of free acid, an apparently inert bluish-green iso-nitroso-antipyrine being formed.—P.J.1889,807.

Antipyrine is also incompatible with the cinchona alkaloids, forming a precipitate which is soluble in weak acids.—B.M.J. ii., 89,1113. *Vide* also *p*.55.

Liquefactions occur on rubbing it with butyl-chloral hydrate or sodium salicylate, but solutions with the latter keep without perceptible change if dilute.—P.J.1889, 862; Th.Gaz. May, 1889,359. Liquefaction also occurs on mixing with β-naphthol. Caffeine is rendered soluble in one-half less water by the addition of an equal quantity of Antipyrine; and Quinine hydrochloride 2, with Antipyrine 1, will dissolve in 4 of water.

Effervescent Antipyrine contains 5, 10 or 15 grains in a drachm. *Dose.*—One teaspoonful or more. Phenazonum Effervescens, B.P.C., contains 8 per cent. (about 5 grains in a drachm).

Injectio Antipyrin Hypodermica.— 1 grain contained in 2 minims. *Dose.*—8 to 30 minims (0·48 to 1·8 Cc.). The pain it causes may be lessened by the addition of cocaine, as in

Injectio Antipyrin et Cocainæ Hypodermica, containing 1 grain of Cocaine Hydrochloride in 150 minims of above. *Dose.*—8 to 30 minims or more.

Tablets of Antipyrine contain 2½ (0·16 Gm.) and 5 grains (0·32 Gm.) each.

Dose.—1 to 4 or more.

Tablets, Antipyrine 3 grains and **Caffeine 1** grain.

Chorea may be relieved as also the pains of locomotor ataxy, and its local use in solution may stop epistaxis.

It is said to diminish the quantity of urine and tends to suppress flow of milk.

Useful in enuresis.—B.M.J. ii./89,838; L. ii./91,326.

Valuable in dysmenorrhœa.—L. i/90,77.

Rapid in action in reducing temperature, but this rises again on diminishing frequency of dose. Pyrexia often preferable to saturation with antipyrine.—B.M.J. i/91,684.

Impairment of sight after continued use.—L.ii./91, 1138; B.M.J.E. ii./92,87.

Four attacks of smarting rash from 10-grain doses.—B.M.J. ii./93,944; L. i./96,1562.

Poisonous effects from 10 grains.—B.M.J. i./96,269, 511; M.C. Mar.97,453; B.M.J. ii./99,85.

8 grains twice hourly for the colic of gall-stones.—M.C. Oct.92,46.

Antipyrine intoxication, poisonous effects and deaths. —B.M.J.E. ii./99,7.

Acetopyrine.—*Syn.* ANTIPYRIN ACETO-SALICYLAS.

Dose.—7½ to 15 grains (0·5 to 1 Gm.).

A combination of phenazone with acetic and salicylic acids, having slight odour, soluble 1 in 160 only of water, but soluble about 1 in 3½ of Alcohol 90 per cent. An anti-arthritic remedy with analgetic and sedative properties, and has been employed in sciatica and hemicrania.—P.J. i./01, 138; B.M.J.E. ii./01,40.

Bromopyrin.—*Syn.* ANTIPYRIN MONOBROMIDE.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

In white crystals, soluble in alcohol and chloroform. Has antipyretic properties.

Ferripyrin.—*Syn.* FERROPYRIN.

Dose.—3 to 8 grains (0·2 to 0·5 Gm.).

A compound of ferric chloride and antipyrine; is a soluble orange-coloured powder. Given for chlorosis and anæmia as a hæmatinic, especially when an analgesic action is required; acts also as a hæmostatic and local astringent, applied pure or 20 per cent. aqueous solution; and in gonorrhœa, injections of 1 to 1½ per cent.—L. i./95,1320; B.M.J.E. i./95,44; P.J. 1895, 990; ii./96,30.

Hypnal.—*Syn.* MONOCHLORALANTIPYRIN.

Dose.—15 grains (1 Gm.), in cachet or suspended.

A compound of antipyrine and chloral, soluble 1 in

10 of water. Is sedative and hypnotic, specially useful where there is pain or cough.—B.M.J. i./90,970; L. i./91,387; Pr. xlv. 54; P.J. 1890,889,977,161.

Iodopyrin.—*Syn.* IODANTIPYRIN.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

A derivative of antipyrine, in which an atom of iodine replaces one of hydrogen; in white colourless silky needles, tasteless and odourless, slightly soluble in cold water and alcohol, readily in hot. Said to rapidly lower temperature and promote diaphoresis in typhus and phthisis.—P.J. 1891,877; L. i./92,263; B.M.J. i./92,22.

Tablets, 5 grains (0·32 Gm.). *Dose.*—1 to 4.

Pyramidon. Is claimed to be an AMIDO DERIVATIVE OF ANTIPYRIN.

Dose.—5 to 8 grains (0.32 to 0.52 Gm.).

Is in the form of a white powder, soluble about 1 in 9 of water and 1 in 2 of alcohol 90 per cent. An antipyretic, and has been employed in asthma. A camphorate (*dose*—8 to 12 grains), bicamphorate (*dose*—12 to 15 grains), and salicylate (*dose*—8 to 12 grains) are also prepared.—B.M.J. E. ii./03,79.

The camphorates are antipyretic, and have been advocated to suppress the sweats in phthisis. The salicylate is given in rheumatic affections. **Trigemin** (*dose*—12 grains) is a butyl-chloral hydrate compound of pyramidon. Is not a hypnotic; employed for neuralgia. —B. & C. D. i./04,168.

Salipyrin. —*Syn.* **Antipyrinum Salicylicum, P. Aus. Add., Pyrazolonum Phenyldimethylicum Salicylicum, P.G. iv.**

Dose.—15 to 30 grains (1 to 2 Gm.).

A compound containing 57·7 per cent. of antipyrine and 42·3 per cent. of salicylic acid, in white crystalline powder, with sweetish taste; sparingly soluble in water, freely in alcohol; decomposed by acids and alkalis.

Successful in acute rheumatic fever, but does not prevent relapse; effective also in chronic rheumatism and sciatica. Has antipyretic action, but must be given in dose double that of antipyrine.—B.M.J. ii./90,850; B.M.J.E. ii./90,6; ii./92,20; L. i./92,262.

Recommended for influenza and any acute catarrh.—B.M.J.E. ii./93,103.

Useful for menorrhagia.—L. i./95,1005.

Tablets contain 5 grains (0·32 Gm.).

Tolypyrin.—*Syn.* TOLYLANTIPYRIN.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

A compound of antipyrine in which one hydrogen atom of the phenyl group is replaced by methyl. In colourless crystals, soluble about 1 in 10 of water; freely in alcohol; taste bitter.

Resembles phenazone as an antipyretic, antineuralgic, and antirheumatic.—P.J. 1893,605; Pr. 1.383.

Tolysal.—*Syn.* PARA-TOLYL-DIMETHYL-PYRAZOLONE SALICYLATE.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.)

A compound of tolypyrin and salicylic acid, in small white crystals, slightly soluble in water, freely in alcohol. Is antipyretic and analgesic in articular rheumatism and neuralgia.—P.J. 1893,605.

Tussol.—*Syn.* ANTIPYRINE MANDELATE.

Dose.—5 to 15 grains (0·32 to 1 Gm.); for young children 1 grain is a dose.

In white granular crystals, soluble in water, with saline taste; recommended for whooping-cough and bronchial disorders.

Phenocoll Hydrochloridum, Hydrochloride of Amido-acet-para-phenetidin, a derivative of Phenacetin.

Dose.—7 to 15 grains (0·5 to 1 Gm.), in solution or cachet.

A white crystalline powder with sharp saline taste, soluble about 1 in 16 of water.

Reduces temperature without rigors or sweats, of marked effect in rheumatic fever, but none in gonorrhœal rheumatism. Temperature in phthisis reduced almost to normal by 77 grains in 24 hours; day temperature affected more than night; urine coloured reddish-brown.—L. i./91,1060; P.J. 1891,977,265; B.M.J.E. i./91, 141.

On account of solubility is more rapidly absorbed and quicker in action than phenacetin, and appears to possess sedative action of latter in a larger degree. Useful in acute rheumatism; small doses in hectic fever. May be used hypodermically.—Pr. xlviii. 138; B.M.J.E. i./92,16,56.

Phenocoll a good and quick antipyretic, and in large doses effective in rheumatism; may be used when salicylic acid contra-indicated. Also beneficial in neuralgia arising from sudden cold.—L.ii./92,438 ; B.M.J.E. i./92,4. Successful in malaria ; as a prophylactic one dose daily.—P.J. i./96,178.

May cause collapse and cyanosis in children and cases of advanced phthisis.—B.M.J. ii./98,1056.

Useful palliative in pertussis $\frac{1}{6}$ to 2 grains hourly.—P.J. ii./00,544.

Salocoll.—*Syn.* PHENOCOLL SALICYLATE.

Dose.—10 to 30 grains (0·65 to 2 Gm.).

In small white silky crystals, less soluble in water than phenocoll hydrochloride. It combines the actions of phenocoll and salicylic acid, as an antipyretic, antineuralgic, and antirheumatic, and is said to cause no gastric disturbance, and to be free from any unpleasant effects.

Pyoktanin. A trade name for **Methyl-Violet.**

A mixture of methyl-para-rosanilines, in deep green crystalline powder, soluble 1 in 75 of water, 1 in 20 of alcohol 90 per cent. ; solutions should be freshly made and kept in dark bottles, as they are decomposed by light. A 1 in 500 solution has been used as an injection, and 1 per cent. lotion for malignant growths, carcinoma uteri, cancrum oris, and sarcoma ; it is also used as a dusting powder to ulcerated and diseased surfaces ; and has been injected around boils and carbuncles to abort them.

Cardiac dropsy has been treated by internal doses of $\frac{1}{6}$ grain thrice daily. It increases the perspiration and causes diuresis.

Has slight antiseptic power, and is no check on suppuration.—L. ii./90,408,783 ; B.M.J. ii./90,702.

A yellow variety of Pyoktanin is said to be an **Auramine.** Soluble 1 in 80 of water and 1 in 105 of Alcohol 90 per cent.

Thallinæ Sulphas, Tetrahydroparamethyloxychinoline Sulphate.

Dose.—3 to 5 grains (0·2 to 0·32 Gm.).

In white or whitish granular crystals, melts at 212° F., has a nauseous, slightly pungent taste, soluble 1 in 7 of cold water, which darkens by exposure to light. It possesses marked antipyretic properties, but diminishes the respiratory capacity of the blood by destroying its hæmoglobin, in this respect resembling kairine rather than antipyrine. Reports of its action are found to vary; some have noticed a gradual fall in temperature and absence of secondary disturbance, whilst others note a sharp fall, followed by rigors.

Bougies of Thalline Sulphate, 2½ and 5 per cent. Contain 1 or 2 grains in each, combined with gelatin, and are made 2½ or 4 inches long.

'**Collapsubes**,' with catheter attachment, of Thallin, Ointment 5 per cent. with Cocaine Hydrochloride 2 per cent. are prepared for the treatment of gonorrhœa.

Antrophores, or spiral spring bougies coated with gelatin, and medicated with 5 (or weaker 2½) per cent. of thalline, have been used successfully for gonorrhœa Are recognised in P.G. iv. Also

Antrophores of Protargol, contain 0·5, 1, 1½ and 2 per cent.

Antrophores of Resorcin and Tannin, contain of each 5 per cent. For others, *vide* Index.

Injection of 1 to 2 per cent. aqueous solution is useful in gonorrhœa.

Fatal effects follow its use *per os*. A case is recorded in which dose was increased up to nine grains proved fatal; four grains should not be exceeded.

Thermodin.—*Syn.* ACETYL-PARA-ETHOXY-PHENYL-URETHANE.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

In colourless, tasteless crystals, very slightly solubl in water. Antipyretic, fall of temperature gradual, n unpleasant symptoms.—B.M.J.E. i./94,12; P.J. 1894 731; Pr. iii./129.

COCÆ FOLIA.

Coca Leaves (*Off.*). *Syn.* CUCA.

Dose.—½ to 2 drachms (2 to 8 Gm.).

The dried leaves of *Erythroxylum Coca* and its varietie

Two varieties are met with, North Peruvian c Truxillo variety, *Erythroxylon Coca* var. *novo-gran tense*, Morris, of a pale green colour, small and thi and Huanuco or Bolivian variety, *E. bolivianum*, Burc thought to be a distinct species, which are larger, broade and thicker, of a dull olive colour. The characterist inner curved lines from base to apex are on this mo marked.

The leaves contain the crystalline alkaloid Cocaine, *v.p.*198. A content of 0·5 per cent. of this base is suggested as a standard.—P.J. ii./02,495. They are said to be most active when freshly dried, and are much used by the natives in Bolivia and Peru, miners, travellers, and others.

Elixir Cocæ.—1 in 6 of Simple Elixir.

Dose.—1 to 4 drachms (3·5 to 15 Cc.) in water is a palatable preparation.

Extractum Cocæ.

Dose.—2 to 15 grains (0·13 to 1 Gm.), in pills or pastils.

Made with proof spirit; 1 = about 4 of leaves.

Extractum Cocæ Liquidum (*Off.*).

Syn. EXTRACTUM ERYTHROXYLI FLUIDUM, U.S.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.). 1 = 1 of leaves exhausted with 60 per cent. alcohol.

If freed from wax, it is miscible with water and more palatable. A standard of 0·5 per cent. of Cocaine would be desirable.

Infusum Cocæ.—1 in 50 of boiling water.

Is a refreshing beverage with a slice of lemon.

Pastillus Cocæ Extracti.—2½ grains (0·15 Gm.) of the extract in each.

Dose.—One every two or three hours.

Useful for loss of voice due to weakness or relaxation of the vocal cords.

Vinum Cocæ.—About 1 in 8 of Sherry.

Dose.—¼ to ½ ounce (7 to 15 Cc.) diluted with wine or water. Checks vomiting of irritable stomach.

This is strongly medicated; it must contain half a grain of alkaloid in the ounce, or it cannot be sold without a licence. Weaker preparations, containing about 1 in 20 or 30 of a sweet red wine, are sold by wine merchants.

Coca has been praised as a nervine and muscular tonic, preventing waste of tissue, appeasing hunger and thirst, relieving fatigue, aiding free respiration, and as being useful in various diseases of the digestive and respiratory organs; it is recommended for indigestion, gastralgia, gastrodynia, nausea, sickness, distaste for food, is given to relieve pain, nausea, vomiting or discomfort caused by excess in either eating or drinking or by pregnancy, and as a cure for morphine and alcohol craving. In using it for this in America it is said in some cases to have produced 'Coca Craving.' The leaves are sometimes smoked to relieve asthma; chewed to appease hunger and support strength, in the absence of food, and used generally for the stimulant and narcotic effects of tobacco and alcohol.

Is of use to steady the nerves—to a sportsman in shooting, for example.

Tea made from it has a taste similar to that of green tea, and is much more effectual in keeping people awake. Markham's Peruvian Bark, p. 152.

Cocaina (*Off.*). *Syn.* METHYL-BENZOYL-ECGONINE.
Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.), in a pill or tablet.

This important alkaloid, obtained from Coca, was first isolated by Niemann in 1860. It crystallises ir shining monoclinic prisms, and is almost insoluble ir water; soluble 1 in 7 of 90 per cent. alcohol, abou 1 in 100 of liquid or soft paraffin, freely so in chloroform ether (about 1 in 3), oil of cloves, and many othe volatile oils, and 1 in 10 of castor, and other fixed oils. The paraffin and castor oil solutions diluted have provec serviceable in eye cases. Soluble also in about 1 in 3 o benzol, toluol, and amylic alcohol, and 1 in 80 of petroleum spirit. Insoluble in glycerin. Constitutionally i is ecgonine with the hydrogen atoms in the carboxy and hydroxyl groups replaced by a methyl and benzoyl group respectively. Hot water decompose it, forming an acid solution which contains benzoyl ecgonine, ecgonine, and cocaine benzoate. It is almos tasteless, but produces a tingling numbness on the tongu and local anæsthetic action on all mucous membran Good Coca leaves yield 0·5 per cent. or more of Cocain but the average is less, if fermented—often *nil*. Most the Cocaine now used is manufactured in a crude form i Lima, and is purified and recrystallised or converted int the hydrochloride after its arrival in Europe.

No coloration is produced by dissolving pure Cocain or its hydrochloride in cold concentrated sulphuric acid with the salt, effervescence occurs, owing to hydrochlori acid gas being set free. Some samples of them give faint evanescent yellow coloration, and others give magenta tinge which gradually passes to a brownish yellow, and eventually the solution becomes almost colourless.

A Cocaine Salt in solution may be estimated by precipitating Cocaine periodide with decinormal Iodine, weighing the resulting compound or ascertaining the excess of the Iodine. Ecgonine does not interfere, but benzoyl-ecgonine must be removed.—P.J. i./01,553,602; ii./01,223,254.

The four alkaloids Cocaine, Truxilline (previously called Cocamine or Isatropyl-cocaine), Cinnamyl-cocaine and Tropa-cocaine are known to exist in coca leaves. The last-mentioned is much less toxic than Cocaine (*v.p.*198) and it occurs in only very small proportion in crude cocaine. In reality there are two isomeric Truxillines designated *α* and *β* Truxilline. The *α* Truxilline is in predominance in the natural product.

Cocaine, Truxilline and Cinnamyl-cocaine being ecgonine derivatives yield ecgonine, the acids mentioned below, and methyl alcohol on hydrolysis. This fact is of importance commercially as the amorphous residue remaining after extracting as much as possible of the crystalline Cocaine, can be converted into ecgonine, and this by treatment with Benzoic Anhydride and Methyl Alcohol can be converted synthetically into Cocaine.

Garsed suggests a method of estimating Cocaine in crude cocaine—the impurities Truxilline and Cinnamyl-Cocaine being converted by alkaline hydrolysis into Truxillic and Cinnamic Acids. Of these two the Cinnamic Acid is first determined by bromination; the amount of Truxillic Acid is ascertained by its practical insolubility in water, and the amount of Benzoic Acid produced by hydrolysis of cocaine is obtained by difference. A large number of methods were tried before arriving at this as the most accurate, they included chromate precipitation, oxidation experiments, volumetric determinations, bromine absorption, steam distillation, and varying solubility in water.—P.J. ii./03,784; C.D. ii./03,800.

Antidotes.—Toxic effects are best counteracted by amyl nitrite, nitroglycerin, digitalis, strychnine, or ammonia, with strong coffee by mouth or enema, and ether hypodermically. Anæsthesia by chloroform and Ether may be required to prevent respiratory spasms.

Toxicology.—Is rapidly converted into ecgonine in the human organism. Methods of detection.—Y.B.P. 1902,60.

As pure Cocaine (the alkaloid) is soluble in fats and oils, and its salts are not, it should always be used when it has to be combined with fatty or oily substances, for use externally, *e.g.*:—

Bougies of Cocaine. $\frac{1}{2}$ grain (0·032 Gm.) or more, with cacao-butter. Are useful in painful affections of the urethra.

Cocaine—Lanolin, containing 8.4 per cent. Cocaine = 10 per cent. Cocaine Hydrochloride, is a special preparation which is found useful in treatment of dental cavities prior to extraction.

Collodium Cocainæ. 2 per cent. in flexible collodion Allays the itching, and is a cure for inflamed chilblains.

Emplastrum Cocainæ.—1 dissolved in 50 of lead plaster heated in a water-bath. Useful for intercostal neuralgia, sciatica, tender corns, bruises, &c.

Nebula Cocainæ Oleosa, C.L.T.E.
Cocaine (base) 25 grains, Almond Oil 1 ounce.

Oleum cum Cocaina.

A 2 per cent. solution, more or less, if ordered, in almond oil, is mostly used. This is useful for earache. For the eye a 2 per cent. solution in **Castor Oil** is used, may be combined with homatropine (*v.p.* 108); for catheters, a solution in equal parts castor and almond oils does well, it is viscid, and does not congeal in winter.

Suppositories and **Pessaries** $\frac{1}{2}$ grain (0·032 Gm.), or more with cacao-butter.

For many purposes, *e.g.*, painful hæmorrhoids a **Compound Suppository** of Cocaine $\frac{1}{6}$ grain with Morphine $\frac{1}{2}$ grain is useful.

Tabellæ Cocainæ, Cocaine Tablets. $\frac{1}{8}$, $\frac{1}{10}$, $\frac{1}{12}$, and $\frac{1}{20}$ grain with chocolate. The usual dose is $\frac{1}{20}$ grain

Dose.—1 every quarter-, half-hour or hour, quickly eaten and swallowed. Useful for sea sickness, chloroform or alcoholic sickness, and sickness of pregnancy.

Cocaine Tablets useful for sea-sickness where there is much pain and irritability.—B.M.J. ii./93,596.

Unguentum Cocainæ (*Off.*).—Cocaine 1, Oleic Acid, by weight, 4 (1 grain=2 drops), heat gently to dissolve, add Lard 20. Useful where absorption is required, as in facial neuralgia, shingles, eczema, erysipelas, urticaria, and pruritus (R.O.H. has Cocaine 1, Soft Paraffin 50; heat to dissolve).

Cocaine is soluble 1 in 2 of anhydrous lanolin if gently warmed. Useful to anoint internal os in labour. —B.M.J. ii./94,1427; P.J.1895,912.

Vaselinum Cocainæ. Is made with Cocaine (base), 1, 2, 4, and 10 per cent. The 1 or 2 per cent. are suitable for eye work, and the 4 and stronger percentages are useful for catheterisation, burns, and for intense sensitiveness of parts, pruritis, &c.

Cocainæ Citras.

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.).

In deliquescent white crystals; used by dentists.

Cocainæ Hydrobromidum.

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.). Is a stable salt, in small, white, hard, acicular crystals.

Cocainæ Hydriodidum.

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.).

In hard, colourless columnar crystals, slightly soluble in water. Useful for producing dental anæsthesia.

Cocainæ Periodidum. Di-Iodo-Cocaine Hydriodide. *Dose.*—$\frac{1}{20}$ to $\frac{1}{2}$ grain.

In violet-black crystals, prepared by decomposition of Cocaine Hydrochloride, potassium iodide and slight excess of iodine in strong alcoholic solution, or, direct action of alcoholic solutions of the base and of iodine, mixed, apparently produces the same on crystallization. —B.M.J. i./01,1408.

Has been tried for the vomiting of pregnancy.

Cocainæ Hydrochloridum (*Off.*).

Off. Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.), but more may be given, in aqueous solution, pill, or pastil.

This salt forms light, shining, lamellar crystals, with bitterish taste; being soluble in half its weight of water, the tingling numbness or local anæsthesia it produces on the tongue is more intense than that produced by the base.

One part of Cocaine base = 1·12 of Cocaine Hydrochloride.

Freely soluble in alcohol and in glycerin, insoluble in ether, fats, and oils. It will crystallize with 9·5 per cent. of water of crystallization, but the anhydrous salt alone is official. It dissolves with effervescence but without colour in cold sulphuric acid (see Cocaine, p. 198), but the mixture chars if heated, benzoic acid being sublimed. Ignited, it burns without residue. Its aqueous solution gives a white precipitate with ammonium carbonate, soluble in excess. It is also precipitated by borax.* If one drop of solution of potassium permanganate, B.P., be added to a solution of 1 grain of it in a drachm of distilled water, acidulated with three drops of diluted sulphuric acid, the bright deep colour of the solution, if kept covered, should not change during half an hour, indicating absence of cinnamyl-cocaine and other organic matter. If the sulphuric acid be omitted, as in B.P. test, the addition of permanganate produces a red precipitate which does not change colour within an hour. The salt should not only be in good crystals, but should, by the following modification of **MacLagan's Test,** yield a distinctly crystalline precipitate of pure Cocaine within three minutes—when 1 grain of it is dissolved in 2 ounces of distilled water, and six to eight drops of solution of ammonia, B.P., are added and well stirred. If more than 4 per cent. of amorphous alkaloid (principally isatropylcocaine now termed Truxilline) be present, there will be only a cloudiness. The precipitate re-dissolves after twenty-four hours or more, the Cocaine being converted into methyl alcohol and benzoylecgonine. Isatropylcocaine is highly toxic.

MacLagan's test is still relied upon as one of the most satisfactory tests for purity.

P.G. iv. gives the additional test of Metzer: 0·05 Gm. Cocaine Hydrochloride dissolved in 5 Cc. water, 5 drops 3 per cent. Chromic Acid solution added. A yellow transient precipitate is produced but precipitates again on further addition of 1 Cc. Hydrochloric Acid, showing absence of Günther's base as impurity.

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* Where borax and cocaine hydrochloride are prescribed together a weight of Boric Acid equal to that of the borax should be ordered at the same time to prevent precipitation. —Y.B.P.,1903,270.

In dispensing White Precipitate with cocaine hydrochloride in the form of an ointment, dissolve the cocaine salt in a drop or two of water. Rub the white precipitate down with a little almond oil, mix, and add the remainder of the ointment base—*e.g.*, soft paraffin.—Y.B.P.,1903,271.

Evil results having followed the application of Cocaine as an anæsthetic in several dental and eye operations, the bad effects have been attributed to fungoid growths. Whether due to these, to impurity of the salt, or to the condition or idiosyncrasy of the patients is not clear. Salicylic acid has been found to be the most effective preservative, and its addition is ordered in the official hypodermic injection (see below).

Aurinaria Cocainæ Hydrochloridi.—EAR CONES (*v.p.* 112), contain $\frac{1}{10}$ grain in each with gelatin basis.

Buginaria Cocainæ Hydrochloridi, NASAL BOUGIES OF COCAINE HYDROCHLORIDE.

One-sixth of a grain in each with gelato-glycerin basis. Useful in hay fever, sometimes combined with $\frac{1}{120}$ grain of atropine sulphate in each.

Guttæ Cocainæ Hydrochloridi, R.O.H., 1 in 50.

Injectio Cocainæ Hypodermica (*Off.*).

Salicylic Acid $1\frac{1}{2}$, Boiling Distilled Water *q.s.* to produce 1000 when cooled, and Cocaine Hydrochloride 100 added. *Dose.*—2 to 5 minims (0·12 to 0·3 Cc.).

This official injection is a stable 10 per cent. solution, which for the use of oculists may be diluted to a 2 per cent. solution, and still remain free from tendency to develop fungoid growths. It may be used as an application for producing local anæsthesia. The brush applying it should not be dipped in the stock of solution. A solution up to the strength of 50 per cent. may be prepared in salicylic acid solution of the above strength, which is nearly saturated.

Hypodermic Tablets $\frac{1}{10}$, $\frac{1}{8}$, $\frac{1}{6}$, $\frac{1}{4}$, and $\frac{1}{2}$ grain of the hydrochloride in each.

Lamellæ Cocainæ, Discs of Cocaine (*Off.*); **R.O.H.**

Discs of gelatin, each containing $\frac{1}{50}$ grain of Cocaine Hydrochloride are for ophthalmic use. These should be prepared in an atmosphere carefully rendered aseptic. Also prepared containing $\frac{1}{100}$ and $\frac{1}{200}$ grain in each, and in combination with Atropine (*v.p.*104), Homatropine (*v.p.*109), and Physostigmine (*v.p.*412).

Nebula Cocainæ Hydrochloridi, C.L.T.E.—Cocaine Hydrochloride 48 grains, Saturated Boric Acid Solution 1 ounce.

Pastillus Cocainæ Hydrochloridi. 1/10 grain (0·0065 Gm.) in each (or more if ordered).

Useful in allaying throat irritation and hoarseness.

Pastillus Cocainæ et Morphinæ contains 1/15 grain (0·0043 Gm.) Cocaine and 1/30 grain (0·0022 Gm.) Morphine. Useful for coughs.

Pilula Cocainæ Hydrochloridi. 1/5 grain (0·013 Gm.) in each (or more, if ordered), with milk sugar and syrup.

'**Solubes**' **Cocaine Hydrochloride** contain 1 and 5 grains for lotions.

'**Sterules**' (*v.p.*487) are prepared containing cocaine hydrochloride solution 10 grains to the ounce (2·3 per cent.).

For general purposes **Large 'Sterules'** are prepared containing 10 minims of cocaine hydrochloride solution 5 per cent. and 10 per cent. strength, *vide* also Index for **Sterules, Hypodermic**.

Syrupus Cocainæ. Hypodermic injection of cocaine hydrochloride 22 minims, syrup of orange flower to 1 ounce. *Dose.*—1 drachm = 1/4 grain.

Trochisci Cocainæ Hydrochloridi. 1/12 grain (0·0054 Gm.) in each. Used for similar purposes to the pastils. T.H. has 1/10 grain.

Cocainæ Nitras, Cocaine Nitrate.

Dose.—1/20 to 1/2 grain (0·0032 to 0·032 Gm.).

In large colourless crystals, readily soluble in water. Is compatible with silver nitrate, and if used previously in solution lessens the pain caused by the latter salt.

Cocainæ Phenas.

Dose.—In pill, 1/20 to 1/2 grain (0·0032 to 0·032 Gm.).

A slightly soluble pasty compound, used by dentists and given for gastralgia.

In nasal and laryngeal use anæsthesia slower, but more prolonged than after hydrochloride. Is strongly antiseptic and may safely be used on cut surfaces, as its coagulating effect on albumen prevents too rapid action. —B.M.J.E. i.93,80.

Cocaine phenate may be used in cases of idiosyncrasy against the hydrochloride.—Pr. li.299.

Cocainæ Salicylas.

Dose.—1/20 to 1/2 grain (0·0032 to 0·032 Gm.).

Is in minute snow-white crystals, slightly deliquescent; it forms a solution which keeps well, but is a doubtful salt. In spasmodic asthma, the hypodermic injection of a full dose at the beginning relieves the attack.

Cocainæ Sulphas,

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.).

A deliquescent granular white powder.

Besides rendering the superficial structures of the eye anæsthetic, Cocaine is a mydriatic, and paralyses the accommodation, the latter passes off sooner than the dilatation of the pupil; this does not at longest last more than twelve hours. The sensitiveness of the iris is less affected than that of the surface of the eye. The great excellence of cocaine consists in the limitation of its action to the tissues to which it is applied. When applied to a mucous membrane, it has probably a constricting action on the vessels, produces a blanching of the part, and simultaneously a deadening of the nervous excitability which passes into a complete state of anæsthesia; its effect, however, does not sink deeply into the adjacent tissues, nor does it last long. This surface application is sufficient to render painless the use of a caustic, the passage of catheters and lithotrites, or the performance of operations which do not involve the more deeply-seated tissues. Injected hypodermically, the aqueous solutions of its salts deaden sensibility around the puncture, so that the deep prick of a pin is not felt—the surrounding part is reddened, but after thirty minutes it resumes its normal condition; injected locally, is more useful than morphine in relieving sciatica. Although solutions of it are little absorbed by the skin,—even a chloroform solution is scarcely at all absorbed,—yet the application of an ointment of the pure alkaloid, made with lard, or an oily solution of it, to a surface will remove the pain of inflammation, as in eczema or erysipelas, or the pain of facial neuralgia or shingles, and the irritation of urticaria or pruritus. Burns and scalds should first be brushed over with a 4 per cent. aqueous solution of the hydrochloride, and the pure alkaloid combined with Carron oil (Linimentum Calcis), petroleum cerate, or boric acid ointment, afterwards applied on cotton wool or lint.

Combined with boric acid ointment, also, it may be used for fissured nipples, or for these and stings and bites of insects an aqueous solution may be applied. The irritability of inflamed mucous surfaces, as in hay-fever, influenza, coryza, bronchitis, spasmodic asthma, laryngitis, and pharyngitis, is much relieved by the spray of a watery solution of a cocaine salt. Its local application relieves the pain of many minor obstetric operations, and the spasmodic and painful affections of the vagina, causing dyspareunia and vaginismus, may be minimised, by vaginal injections of a quarter of a grain of cocaine in 1 per cent. oily solutions. In dentistry, it is useful in toothache; it deadens the sensibility of exposed pulp. The pure alkaloid is preferable to the salts for this purpose, as, being only slightly soluble in water, it is less liable to be washed away by the saliva. If a little be inserted in the cavity of a carious tooth and covered with a plug of wool soaked in chloroform of mastiche (*v.p.*168) all pain is obtunded for a considerable time. A strong solution in oil of cloves is also useful. In preparing the cavity, previous to filling, or applying arsenical paste, sensitiveness is more effectively treated by using a salt of cocaine—either the hydrochloride or citrate; the latter has been recommended, as it can be formed into a pellet with the fingers and pressed into the cavity, but it is not so rich in true alkaloid as the hydrochloride; yet, either of these is absorbed more quickly than the alkaloid itself, which, as before said, is more suitable for plugging a cavity for some length of time. In extraction, if a dose be hypodermically injected into the gum on each side at the base of the tooth, after waiting about five minutes this may be done almost painlessly, and, if a 50 per cent. aqueous solution of the hydrochloride be painted on the surrounding gum, the first pain of inserting the forceps is annulled. The eye, ear, throat, mouth, tongue, pharynx, nose, larynx, trachea, urethra, vagina, os uteri, anus, rectum, and, in fact, the whole mucous membrane, as well as cut surfaces and open sores, are affected by it, but the true skin is less so.

Solutions of cocaine hydrochloride have been employed topically in excision of the tonsils, cauterizing the turbinated tissue of the nose, painting chancres previous to the application of nitric acid or other caustics, opening abscesses, removing polypi, and many cases of iridectomy and operation for cataract, squint, and the removal of foreign bodies from the eye. For the eye sterile aqueous solutions of the hydrochloride of cocaine of mostly 2, or up to 4 per cent. are used, and for other purposes from 4 to 20 or even 50 per cent.; of the weaker solutions it is necessary to repeat the application three to five times, at intervals of three to five minutes. No operation should be commenced within at least ten minutes of the first application. Injurious effects, either local or constitutional, rarely follow its use.

To produce anæsthesia by the Local Infiltration method, solutions of cocaine (and eucaine, *v.p.*211) are used by subcutaneous injections made along the lines of proposed incisions, and then into deeper parts before cutting them, and into the sheaths of nerve trunks to annul sensation in parts of limbs, &c. Its action commences in three minutes, increases for ten to twenty minutes, and mostly disappears within half an hour. The anæsthesia may be prolonged by applying an Esmarch's bandage when possible above the site of injection; this has also the advantage of lessening the risk of toxic symptoms, as the delay of cocaine (and eucaine) in the tissues renders it innocuous, either by fixing it there or destroying it locally. Recently solutions of Adrenalin Chloride (*pp.*211,573) have been added to the anæsthetic injections to constrict the blood vessels and to cause a local anæmia, and so that there may be less bleeding from cut surfaces.—B.M.J.E. ii./03,60; but there is a risk of local gangrene.—B.M.J.E. i./04,18; anæsthesia by means of Cocaine solutions, introduced by lumbar spinal puncture, is followed by a higher death rate than administration of either Chloroform or Ether.—M.A., 1903.

The use of Cocaine and Adrenalin has been advocated for anæsthetising the urethra by swabbing with a plug of cotton wool soaked with 1 Cc. of a 1 per cent. solution of Cocaine Hydrochloride to which 3 drops of a 1 in 1,000 solution of Adrenalin have been added.

For infiltration a 0·01 per cent. solution of Cocaine with 3 to 5 drops of Adrenalin solution 1 in 1,000 to each 100 Cc. is sufficient.

For painless tooth extraction 0·01 to 0·015 Gm. of

Cocaine in from of 1 to 2 Cc. of normal saline with 3 drops of Adrenalin solution added. One half to be injected in front and the other behind the tooth, as near the periosteum as possible.

Intradural injections have also been employed.—B.M.J.E. i./04,51.

Cocaine and Adrenalin for producing anæmia in the Finsen light treatment of Ozœna.—B. M.J.E. i./04,52.

Normal Saline Solution (Sodium Chloride 0·6 per cent.) may be used as a vehicle, especially for eye work.

Anæsthesia for major operations is produced by intraspinal injections, sometimes with trace of morphine added; general effects not manifest but local below puncture very marked, *v.p.*209.

Cocaine is a stomachic, useful after excess either in eating or drinking, in distaste for food, in sea sickness and vomiting of pregnancy or from other causes; it also improves the condition of the stomach in atonic indigestion and nervous affections of this organ, as well as in phthisis and cachectic cases, especially those arising from the use of mercury.

Cocaine Hydrochloride 20 per cent. solution allows nitric acid to be applied to tongue without pain.

Hay fever is relieved by solution applied locally to nose and eyes.

The painless removal of urethral carbuncles and wart and epithelioma is accomplished by its aid.

Rectal and prostatic pains are relieved by ½-grain suppositories.

In sea sickness and in vomiting of pregnancy $\frac{1}{16}$ grain doses every two or three hours in aqueous solution are successful.

Poisonous symptoms from hypodermic injection of 20 minims of Liquor Cocainæ Hydrochloratis.—L. ii./94, 1151.

In eye operations, the diminished elasticity produced by cocaine may cause inconvenience.

Camphor 5, chloral 5, cocaine hydrochloride 1, warmed, form an oily liquid which cures toothache.—L. ii./86, 324.

In dentistry is of doubtful advantage, there is some danger, the gums do not absorb it; cases of poisonous symptoms following its use.—B.M.J. ii./90,732; L. ii./01,5118.

Lithotrity rendered painless by the injection of 16 grains dissolved in 12 ounces of warm water into the bladder.—B.M.J.i./88,972.

Against indiscriminate use, and formation of cocaine habit.—B.M.J. i./89,973; i./02,1020,1041.

Pruritus, the pain of sore nipples, and the irritation following the stings of insects may all be relieved by the local application of cocaine.

A rectal injection checks diarrhœa and straining of dysentery.

Recommended to give 1 drop Nitroglycerin Solution a minute before injection of cocaine, repeating at intervals if the pulse and temporal region be not affected.—B.M.J. ii./91,1204; L. ii./94,420.

A 10 per cent. solution on wool applied to rigid os uteri in first stage of labour produces rapid dilatation.—B.M.J. ii./98,1374.

Injections of a ½ per cent. solution into the spinal canal to produce anæsthesia for operations.—L. ii 99, 1536; B.M.J.E. ii./00,88; i./01,3; Pr. lxv.178; M.C. 1901,377; Med. Ann. 1901,118; L. i./02,912.

Subarachnoid injection produces uterine contraction and may produce labour.—L. i./01,645.

Tropacocaine.—*Syn.* BENZOYL-PSEUDO-TROPEINE.

Obtained from Java Coca. The **Hydrochloride** is freely soluble in water, and is a powerful anæsthetic; in the eye causes neither ischæmia nor irritation or hyperæmia. Three per cent. solution recommended; anæsthesia quicker than with Cocaine, but more transitory; the action may be kept up by adding a drop from time to time. Mydriasis occurs occasionally but slight. No harmful symptoms observed in any case. Injection into gums in large doses only affected pulse for 10 minutes, and did not affect respiration. Employed where it is desired to produce anæsthesia without dilatation of the pupil.

Infiltration with solution has relieved lumbago and sciatica.—M.A. 1904,614.

Tablets (Hypodermic) of Tropacocaine Hydrocloride contain $\frac{1}{30}$ grain.

Neutral aqueous solutions keep apparently unchanged for an indefinite period.—P.J. i./99,431.

Intraspinal Anæsthesia.

Anæsthesia by spinal injections of 1 per cent. tropacocaine hydrochloride dissolved in the spinal fluid said not to be dangerous, and is less irritating than a similar solution of Cocaine. — B.M.J.E. i./02,43,75; L. i./02,912. Tried for puerperal convulsions. — B.M.J.E. ii./02,6.

Acoine. **Di-para-anisyl-mono-phenethyl-guanidine Hydrochloride.**

A white crystalline powder, soluble 6 in 100 of water, is recommended as a local anæsthetic and for subcutaneous injection in eye surgery.—L. ii./99,1082; B.M.J. i./99,1340; B.M.J.E. ii./99,76. Has also disinfectant properties. A 2 per cent. solution in normal saline is employed as an anæsthetic in dentistry.

Eucainæ Hydrochloridum.

Under this name there are two salts which are different in constitution. They are synthetic compounds chemically allied to Cocaine, while resembling it also in the production of local anæsthesia. The **A** salt is now out of use.

Eucaine Hydrochloride B, β-EUCAINE.

The hydrochloride of Benzoyl-vinyl-diaceton-alkamine, in small white opaque crystals, soluble about 1 in 30 of water.

In dentistry 2 to 5 per cent. solutions are used; in ophthalmic work 2 per cent. On mucous surfaces generally and wounds 5 to 10 per cent.—B.M.J.E. i./03,36.

Eucaine is slower in action than cocaine, and less active, solutions of double the strength that of cocaine being necessary, but anæsthesia is more prolonged, while the heart is not affected, nor the pupil dilated. Solutions keep well.—P.J.i./96,342,412; ii./96,63; i./97,82.

Reactions and characters of β-eucaine and **A** eucaine (the manufacture of which has now ceased), and cocaine.—Y.B.P. 1902,24.

Relative toxicity of Cocaine and Eucaine. Action of Eucaine is constant, first action is as a stimulant, is a diuretic, is three times less toxic than cocaine. Boiling does not affect the efficacy of Eucaine solutions.—Therap. 1899,273.

Nebula Eucainæ Hydrochloridi, C.L.T.E.

Eucaine Hydrochloride 48 grains, Sodium Sulphate 10 grains, Distilled Water to 1 ounce.

Ophthalmic Lamels are prepared containing $\frac{1}{100}$ and $\frac{1}{50}$ grain of Eucaine Hydrochloride.

'Solube' Eucaine Hydrochloride 1 and 5 grain, for producing solutions for injection.

β-Eucaine is employed in dentistry in 2 to 4 per cent. solution.

Eucaine solutions should be boiled.—L. i./01,1648.

β-eucaine is less toxic, but less active than cocaine.—B.M.J.E. ii./98,12; i./03,36.

Local analgesic for small operations.—L. i./00,156.

Remarkable results have been obtained by local infiltration analgesia instead of general anæsthesia, prior to performing surgical operations. The fluid used *initially* was a sterile solution of β-Eucaine 1, sodium chloride 8, and water to 1000. The **Solution for Infiltration** was prepared from **Powders**, each containing 3 grains of β-Eucaine and 24 grains of pure crystalline sodium chloride. One of these powders was dissolved in 7 ounces of distilled water, and the solution boiled for a few minutes just before use. A special syringe is employed.—L. i./99, 282; P.J.i./99, 119.

Powders are *now* prepared **double strength** for producing 2 in 1,000 Solution, containing β-Eucaine 3 grains (0·2 Gm.), and Sodium Chloride 12 grains (0·8 Gm.), to produce 3½ ounces (100 Cc. approximately) of solution.

In infiltration operations 50 Cc. or more of the solution is injected—as much as 3 grains of the Eucaine salt is considered safe, and as much as 5 grains have been administered.—L. ii./03,203.

Eucaine and Adrenalin, combined use.

Adrenalin Chloride Solution 1 in 1,000 may be added to the 2 in 1,000 β-Eucaine Solution for infiltration anæsthesia, so as to produce a localised anæmia in addition to the local anæsthesia, *e.g.*, one cubic centimetre of Adrenalin solution (*p.* 573), preferably from a capsule, may be added to a solution made by dissolving one of the above powders in 99 Cc. of boiling distilled water after allowing to cool. This produces

100 Cc. of normal saline solution with 2 in 1,000 β-Eucaine and 1 in 100,000 of Adrenalin Chloride in it, *i.e.*, Distilled Water 100 Gm., Sodium Chloride 0·8 Gm., β-Eucaine 0·2 Gm., and Adrenalin Chloride 0·001 Gm.—Barker, L. ii./03,203.

In addition to the above powders for producing infiltration solutions,

'**Solubes**' are prepared, each containing β-Eucaine 0·05 Gm. and Sodium Chloride 0·2 Gm., to be dissolved in 25 Cc. of sterile water to make the stronger solution.

Compressed Tablets of Eucaine are also made containing $\frac{1}{10}$ grain (0·0064 Gm.) for internal administration.

Unguentum Eucainæ.

Eucaine Hydrochloride 1, Olive Oil 2, Hydrous Wool Fat 7.

For pruritus, Menthol 2 per cent. may be added.

Holocaine Hydrochloride.

The hydrochloride of para-diethoxyethenyl-diphenyl-amidine, produced by combination of phenacetin and para-phenetidin. In small colourless shining crystals, soluble 1 in 75 of water.

One per cent. solution is equal to 2 per cent. cocaine solution. As an anæsthetic for operations on the eye, it allows more bleeding, but little or no dilatation of the pupil. Anæsthesia is prompt and lasting, and is not accompanied by mydriasis or disturbance of the accommodation. On account of toxic properties is not adapted for hypodermic use.—P.J. i./97,368; L. i./97, 1466; B.M.J.E. i./97,55,75,87,92; Y.B. 1898,79,158, 368.

Its use in ophthalmic surgery.—L. i./97,1466; ii./97, 765; B.M.J.E. i./98,36,99; B.M.J ii./98,619.

'**Sterules**' (*v.p.*487) of Holocaine Hydrochloride Solution 1 per cent. are prepared.

Nirvanin.

The hydrochloride of diethyl-glycocoll-para-amido-ortho-oxybenzoic-methyl ester. In small white prisms and readily soluble in water. Possesses anæsthetic properties and has been synthesized with the object of avoiding the respective disadvantages of orthoform and cocaine. Is very slightly toxic, 7 grains having been injected without injury. Effect is more prolonged than cocaine. It has a powerful antiseptic action, a 1 per cent. solution being strongly bactericidal.—P.J. i./99,95, 481; B. & C. D. i./99,1,701; B.M.J.E. i./99,28.

Orthoform. Methyl ester of Para-amido-meta-oxybenzoic acid.

'**Orthoform, New,**' now mostly in demand, is the Methyl ester of *Meta*-amido-*para*-oxybenzoic Acid, and is cheaper than the former.

Dose.—1½ to 3 grains (**0·1 to 0·2 Gm.**) for cancer and painful ulceration of the stomach.

A white crystalline powder, possessing local anæsthetic and antiseptic properties. Is slightly soluble in water, and forms a **Hydrochloride** soluble about 1 in 9 of water; action of base is more prolonged.

A 10 per cent. aqueous solution of the hydrochloride is used, or 10 to 20 per cent. with lanoline or paraffin ointment or collodion solution of pure orthoform, or this as a dusting powder may be employed to alleviate pain in sores or burns, but has little action unless there is a breach of surface. Orthoform appears to be non-poisonous, but the hydrochloride is too acid and irritating for ophthalmic or hypodermic use.—L. ii./97,738; B M.J. i./98,362; B.M.J.E. ii./97,103; P.J. ii./97,277; M.C. Dec.97,198. Ulcers of larynx.—B.M.J.E. i./99,64.

Recommended as a local application to ulcers.—B.M.J. i./98,362.

Orthoform in glycerin renders painless operations within the uterus.—L. i./98,1434.

An emulsion used as an application to the larynx, 25 parts to olive oil 100 parts, causes a burning sensation followed by 24 hours' anæsthesia.—B.M.J.E. i./99,20.

A kind of necrosis, similar to that caused by phenol, may result from the local application of orthoform.—P.J. ii./99,148e.

Drawbacks to its use.—B.M.J.E. i./99,79.

Is analgesic rather than anæsthetic. — B.M.J.E. ii./99,31.

Syphilitic headaches improved by insufflations. Relieved whooping cough.—M. 01,45.

Anæsthesine.—*Syn.* ETHYL ESTER OF PARA-AMIDO-BENZOIC ACID.

Dose.—5 to 10 grains (0·32 to 0·65 Gm.). in powder or cachets.

Is almost insoluble in water, is soluble 1 in 8 of alcohol 90 per cent., 1 in 50 of Almond Oil and 3 in 100 Olive Oil. Has firstly a burning taste and afterwards a decided numbing effect.

To relieve hyperæsthesia of the stomach and dyspepsia; local insufflations for pharyngeal and laryngeal affections, bougies for urethritis 3 grains, and suppositories 10 grains, for hæmorrhoids with either Gelatin or Cacao butter basis.—P. J. ii./02,48.

Ointments 10 per cent. for burns, eczema, intertrigo, pruritus.

Local use relieves the pain of inoperable cancer.—B.M.J.E. ii./03,32.

CODEINA *(Off.)*.

Codeine. *Dose.*—¼ to 2 grains (0·016 to 0·13 Gm.).

An alkaloid from opium or from morphine, in nearly colourless trimetric crystals. Soluble 1 in 80 of water, very soluble in diluted acids, in alcohol, and in excess of aqueous ammonia, but insoluble in excess of potash solution. It is a methylic ether of morphine,—monomethyl-morphine. It has a slightly bitter taste. In moderate doses is a hypnotic, and in small doses frequently it allays cough in phthisis. In diabetes it lessens the amount of sugar in the urine.

Codeine and Glycerin Jelly. *Dose.*—1 drachm.

Codeine 72 grains, Citric Acid 720 grains, Refined Gelatin 6 ounces, Glycerin 36 ounces, Oil of Lemon 1 drachm, Balsam of Tolu and Distilled Water of each *q.s.* Boil the Tolu in water as ordered in B.P. for making syrup of tolu; of the liquor so prepared take 30 ounces; in 25 ounces of it soak the gelatin, heat till it is dissolved, and add the glycerin. In the remaining 5 ounces of liquor dissolve the Codeine and citric acid, add the solution to the above, add also the oil of lemon, stir well together, and pour into bottles to 'set.' Useful in chronic laryngitis, phthisical cough, &c. Also in ulcer of the stomach.

Pastillus Codeinæ, T.H. ⅛ grain in each.

Pilula Codeinæ Composita.

Codeine ¼ grain (increased to 2 grains if necessary), Extract of Nux-vomica ½ grain, Extract of Lettuce

¼ grain or more. To make one pill, to be taken two or three times a day, for diabetes. — *Pilula Codeinæ Composita, G.H.*, is Codeine ½ grain, Extract of Cascara Sagrada 2 grains, Kaolin ½ grain, Soap to 4 grains.

Tablets, Compressed, of Codeine contain ¼ and ½ grain.

Trochisci Codeinæ contain ⅛ grain (0·008 Gm.).

Codeinum hydrochloricum, P. Aus. Add.;
Dose.—¼ to 2 grains (0·016 to 0·13 Gm.).
In white crystalline powder, freely soluble in water.

Codeinæ Phosphas (*Off.*).
Dose.—¼ to 2 grains (0·016 to 0·13 Gm.).
In granular snow-white crystals, soluble 1 in 4 of water. Contains 70 per cent. of alkaloid, and is most suitable for hypodermic injection, 1 grain in 6 minims.

Syrupus Codeinæ (*Off.*).
Dose.—½ to 2 drachms (1·8 to 7 Cc.).
Codeine Phosphate 40 grains, Distilled Water ¼ ounce; dissolve, and add Syrup 19¾ ounces.

Tablets, Compressed, of Codeine Phosphate contain ¼ grain.

Linctus Codeinæ, G.H. *Dose.*—1 to 2 drachms.
Syrup of Codeine 1, Syrup of Virginian Prune, 1.
St. Th. H. has same strength of Codeine, but different vehicle.

Syrupus Picis cum Codeina, *v.p.*424.

Codeine is certainly the most successful remedy for saccharine diabetes, doses of ¼ to ½ a grain three times a day at first, the dose being increased gradually until sugar disappears from the urine, or increasing drowsiness demand its discontinuance.

Even dieting appears to sink in significance by the side of Codeine.

In bladder troubles, complicated with enlarged prostate, Codeine is a useful sedative when other opiates fail.

COLCHICUM.

Syn. MEADOW SAFFRON. COLCHICUM AUTUMNALE. *Off.*
For the preparations of colchicum the seed and not the corm should be used.—C.U.D.

The corms are *said* to be $\frac{1}{3}$ weaker in quantity of alkaloid.—Y.B.P. 02,17; about 0·3 to 0·8 per cent. is found in both.—P.J. i./04,5.

Tinctura Colchici Seminum (*Off.*). 1 in 5 of alchohol 45 per cent.

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Should be 10 per cent. strength, prepared by percolation with alcohol 70 per cent.—C.U.D.

A standard of 0·1 per cent. Colchicine suggested.—P.J. i./04,5.

Vinum Colchici (*Off.*). 1 of corm in 5 of Sherry.

Dose.—10 to 30 minims (0·6 to 1·8 Cc.).

Extractum Colchici (*Off.*). The inspissated juice of fresh corms.

Dose.—$\frac{1}{4}$ to 1 grain (0·016 to 0·065 Gm.).

The physiological action of colchicum is said to consist in removing the gouty swelling and congested state of the joints by increasing the activity of the circulation, and so eliminating the obnoxious metabolic products of the disease.—M. 02,46.

Colchicina. *Dose.*—$\frac{1}{32}$ to $\frac{1}{16}$ grain (0·002 to 0·004 Gm.) in a pill.

This active principle is a yellowish crystalline powder, soluble in water, alcohol and chloroform, slightly soluble in ether. It is a weak base, most of its salts being decomposed by water. It is the methyl ester of colchicëin, which crystallizes in white needles. Of use in acute gout, rheumatic gout, asthma, cerebral congestion, and uræmia.

Toxic action. It affects the gastro-intestinal mucous membrane, causing severe pains in the bowels, of the nature of colic, vomiting, diarrhœa, intense thirst, and violent burning in the throat, œsophagus, and stomach.—L. i./03,1254.

Antidotes.

Evacuate the stomach. Give water and demulcents—white of egg, oil, barley water. Apply heat to feet. Stimulants.

Determination of Colchicine.—P.J. i./04,246.

Colchicine Salicylate.—*Syn.* Colchi-sal.

Dose.—$\frac{1}{60}$ grain (0·001 Gm.).

A yellowish powder, soluble in water,

Capsules of Colchicine Salicylate.

Contain $\frac{1}{350}$ grain Colchicine dissolved in methyl salicylate. Used in rheumatism and gout. *Dose.*—One every two hours.

COLLAPSUBES.

These consist of collapsible tubes (of pure tin) containing ointments, creams and lubricants, with catheter attachment for applying to the urethra, and with suitable tubes for the uterus and rectum. For general therapeutic and toilet purposes Collapsubes alone are provided. For complete list *see* Index.

Small size Collapsubes marked * in Index are convenient in ophthalmic surgery. With these a glass rod or camel-hair brush is supplied.

COLLODIUM.

Collodion (*Off.*).—*Syn.* CONTRACTILE COLLODION.

Pyroxylin 1, Alcohol (90 per cent.) 12, Ether (Sp. Gr. 0·735) 36. Keep from naked light. Pure ether answers better.

Pyroxylin (dinitrocellulose) is prepared by the action of nitric and sulphuric acids on cotton. In making guncotton (trinitrocellulose), the mixture of acids contains a larger proportion of nitric acid and the time of action is longer. This body is insoluble in a mixture of Alcohol and Ether.

Anodyne Colloid.—*Syn.* AMYL COLLOID.

Amyl Hydride (*v.p.* 396) ½ ounce, Absolute Alcohol ½ ounce, Aconitine 1 grain, Veratrine 6 grains, Collodion to 2 ounces.

For neuralgia, sciatica, lumbago, all muscular pains, &c. The amyl by its rapid volatilization often produces almost instantaneously the desired result; but should the pain continue the alkaloids can be brought into activity by applying a piece of moist spongio-piline over the collodion film.

Celloidin. — Pyroxylin purified by solution in alcohol and ether especially adapted for embedding microscopical specimens and for surgical use.

Photoxylin is a similar preparation.

Celloidin Solution.

Celloidin 1, Methylated Ether Sp. Gr. ·720, 3½, Absolute Alcohol 3½, all by weight.

Collodium cum Oleo Crotonis.

Croton oil 1 part mixed with 7 parts, more or less as required, of Flexible Collodion, forms a useful counter-irritant; a thin layer painted on quickly dries, and its action is limited to the spot to which it is applied.

Collodium Flexile (*Off.*).

Contractile Collodion 48, Canada Turpentine 2, Castor Oil (by weight) 1; makes a more elastic film than Contractile Collodion.

Collodium Iodi.

Iodine 1 (more or less if required) to 15 Flexible Collodion, forms a coating which, on account of the iodine not being so readily volatilized as from an application of the liniment, sustains the action of the iodine and the film protects the part.

Recommended for ringworm and alopecia.

In chilblains and frostbite gives great relief.

Collodium Peruvianum.

Balsam of Peru 1, Collodion 9. Useful for small wounds.—P.J. ii./97,6.

Collodium Salicylicum.

Salicylic Acid 1, Flexible Collodion (¾ strength) 5. For use on exposed parts like the next preparation. U.C.H. has 10 to 60 grains to the ounce of Collodion.

Collodium Callosum.

Salicylic Acid 8, Extract of Indian Hemp 1, Flexible Collodion (¾ strength) 60. Applied daily, this forms a rapid and painless solvent for corns and warts.

The following more active preparation is similarly used; both preparations have proved useful in epithelioma.

Collodium Salicylicum cum Zinci Chlorido.

Salicylic Acid 2, Zinc Chloride 1, Collodion 15. Forms a clear solution.

Mercuric Chloride to the extent of 1 in 30 or more of Salicylic Collodion may be used to warts of a specific nature.

Collodium Salicylicum et Lacticum.

Salicylic and Lactic Acids, of each 10, Collodion 80. Lactic Acid, being destructive to morbid growths, is said to increase the efficacy of this preparation.

Collodium Stypticum.—*Syn.* **Styptic Colloid.** *Adopted by* B.P.C. Absolute Alcohol 10, Benzoin 1. Dissolve, strain, and add Tannic Acid 10, Ether (Sp. Gr. 0·72) 40, Gun Cotton 1. Mix, set aside two or three days, and decant. Useful in checking various forms of hæmorrhage when it can be brought in contact with the bleeding surface.

Carbolic Colloid.

Carbolic Acid 20 grains, Styptic Colloid 1 ounce. Readily soluble in anhydrous ether; solution on wool gives sufficient anæsthesia for many small operations. Gives relief in toothache.

COLOCYNTHIDIS PULPA.

Bitter Apple.

The dried pulp or pith of the fruit of *Citrullus Colocynthis* freed from the seeds. Has a markedly bitter taste, is free from starch, and contains only about 3 to 5 per cent. fixed oil, whereas the seeds contain 15 per cent. or more.

Is imported from Smyrna (the best), Austria, France and Spain.

Colocynthin. The active principle, a glucoside, of Colocynth in the form of an amorphous yellow powder. Has been employed as a hypodermic purgative (*vide* also Apocodeine, *p.*87). *Dose*—15 minims of a 1 per cent. solution in Glycerin, approximately $\frac{1}{6}$ grain.

Colocynthidin. A resinoid substance not possessing such marked purgative properties as the above.

CONDURANGO CORTEX, P.G.

Dose.—In powder, 15 to 60 grains (1 to 4 Gm.).

The bark of *Gonolobus Condurango*, from Peru. Is bitter and acrid. Used as an alterative, and was a supposed specific for cancer, syphilis, and latterly for dyspepsia.

Extractum Condurango Liquidum, B.P.C. 1 = 1. Bark in 60 powder exhausted with 60 per cent. alcohol. *Dose.*—10 to 60 minims (0·6 to 3·5 Cc.).

Alcohol 45 per cent. is a good menstruum.—P.J. i./01,747.

Infusum Condurango. 1 in 20.

Dose.—½ to 2 ounces (15 to 60 Cc.).

Vinum Condurango, P. G. 1 in 10 Sherry (Marsala, P. Aus. Add.).

Dose.—½ to 1 ounce (15 to 30 Cc.) A valuable stomachic.

Condurango slightly helps digestion, but is unable to produce any lasting change in the stomach secretion.

CONINA.

Conine.—*Syn.* CICUTINE; CONICINE.

Dose.—¼ grain, increased gradually to 2 grains (0·016 to 0·13 Gm.).

A liquid alkaloidal principle, almost colourless, and having a penetrating empyreumatic odour, obtained from hemlock, *Conium maculatum.* The different parts of the plant vary in alkaloidal content at different stages of development.—P.J. i./04,186. It is slightly soluble in water. Has been prepared synthetically from *α*-Picoline, and is chemically *α*-normal-propyl-piperidine. Commercial Conine has in combination two other principles, Conhydrine and Methyl Conine, which the following salt is free from.

Conium fruit contains 0·36 to 0·91 per cent. of Conine. A standard of 0.5 per cent. is suggested.—P.J. i./04,5.

Coninæ Hydrobromidum.

Dose.—⅓ grain, increased gradually to 2 grains (0·02 to 0·13 Gm.).

In colourless crystalline prisms, resembling magnesium sulphate in appearance. Soluble in water, 1 in 2, nearly.

Injectio Coninæ Hydrobromidi Hypodermica. 1 grain in 20 minims.

Dose.—1 to 3 minims (0·06 to 0·18 Cc.).

Pessus Coninæ (Hosp. for Women).

Conine ½ minim, Gelatin Mass 20 grains.

Pilula Coninæ Hydrobromidi.

Conine Hydrobromide ⅓ grain (0·02 Gm.) in each.

Tinctura Conii (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Conium Fruit 40 powder, 1 in 5 of Alcohol 70 per cent. by percolation. A standard content of 0·1 per cent. of Conine is suggested.—P.J. i./04,5.

Vapor Coninæ. B.P., 1885.

Juice of Hemlock 4, Solution of Potash 1, Distilled Water 8. Put about 20 drops on the sponge of a suitable apparatus to inhale.

Conine is most suitable in acute mania without organic brain disease.

In epilepsy, dose of ¼ to 1½ grains recommended.—L. ii./84,32; Pr. xxxii.431.

Hydrobromide of Conine acts chiefly as a direct sedative to the respiratory centre; in poisonous doses death is caused by asphyxia. It is employed with advantage in all spasmodic affections, especially those of the respiratory organs; and in neuralgia commence with 1½ grains but not exceed 4½ grains per 24 hours.—Pr. xxviii.136.

Extractum Conii Liquidum, B.P.C.

Dose.—5 to 15 minims.

Conium Fruit is exhausted with alcohol 60 per cent. containing 10 per cent. of acetic acid, the last portion of percolate concentrated and mixed with that first part set aside so as to produce a Liquid Extract which shall contain 1 per cent. of alkaloids.

Succus Conii (*Off.*) *Dose.*—1 to 2 fluid drachms (3·5 to 7·0 Cc.). Fresh Juice 3, Alcohol (90 per cent.) 1. Useful in chorea.

Unguentum Conii, **Hemlock Ointment** (*Off.*).

Hemlock Juice 88, evaporated under 140° F. to 11, Hydrous Wool Fat 33. Mix.

Gives relief in pruritus ani, and for painful fissures.

CONVALLARIA MAJALIS.

Lily of the Valley.

The flowers, as well as the whole plant of this, form an old remedy for dropsy in Russia. In functional and organic disease of the heart, an infusion of 10 grains in 6 ounces of water, of which half an ounce twice a day for two or three days lessens the irritability and peevishness. The effect will continue for from 5 to 9 days without producing dyspnœa or palpitation. Under this treatment the patient can take bodily exercise without discomfort.

Two glucosides have been obtained from the plant: Convallarin, a purgative, *dose*, 3 to 4 grains; and

Convallamarin, a heart tonic, *dose*, ½ to 2 grains.—P.J. 1882,423; L. ii./84,418; B.M.J.E. ii./91,142.

Convallamarin useful in preventing arrest of circulation in chloroform narcosis.—P.J. i./98,471.

Extractum Convallariæ. An aqueous extract.
Dose.—2 to 8 grains (0·13 to 0·52 Gm.).

Extractum Convallariæ Fluidum, U.S. 1 = 1 of flowers. Flowers preferred to root, as latter contain little glucoside.—P.J. ii./99,622.
Dose.—2 to 10 minims (0·12 to 0·6 Cc.).

Tinctura Convallariæ, B.P.C.
Dose.—5 to 20 minims (0·3 to 1·2 Cc.); 1 of flowers in 8 of proof spirit.

Convallaria is a powerful diuretic, irregularity of heart's action is lessened, used in mitral and aortic regurgitation, dilatation of the heart, senile hypertrophy, chronic pericarditis, anæmia, and diabetes.

Convallaria of great service where there is actual valvular lesion, with insufficiency and dilatation of the right side of the heart, venous engorgement, and œdema. Should not be used where opposite conditions exist.—Pr. xxxii.265; B.M.J.E. ii./91,142.

Convallaria has special influence on nervous palpitation and tachycardia.—B.M.J. ii./92,1156.

COTO CORTEX.

Dose, in powder, 1 to 8 grains (0·065 to 0·52 Gm.) 4 to 6 times a day.

Coto Bark, imported from Bolivia, has been used for diarrhœa, gout, and rheumatism. It is rich in resinous principles, which give it a pungent taste.

Extractum Coto Liquidum. 1 = 1 of bark.
Dose.—2 to 6 minims (0·12 to 0·35 Cc.).

Tinctura Coto, B.P.C.

Coto Bark, bruised, 1 ounce, Alcohol (90 per cent.) *q.s.* Macerate 7 days, press, filter, and add more Alcohol to produce 10 ounces.

Dose.—10 to 30 minims (0·6 to 1·8 Cc.), with mucilage and syrup to suspend, every 2 hours.

In stomachic catarrh and diarrhœa of phthisis, 5 to 8 minims of fluid extract or the administration of Cotoin is found useful. It checks the night sweats. The liquid extract should not be combined with Mistura Cretæ.

Cotoin. Obtained from Coto Bark.

Dose.—½ to 2 grains (0·032 to 0·13 Gm.) every 2 or 3 hours in pill or diluted mucilage.

Cotoin is a pale yellow amorphous powder, or in minute curved crystalline prisms, non-volatile, slightly soluble in water, soluble in alcohol, ether, and chloroform, caustic and carbonated alkalis. It has a bitter taste, and the dust is irritating to the nostrils.

For **hypodermic injection** a solution 1 in 4 of acetic ether is said to have a specific action on the bowels in cholera, 15-minim doses to be given every quarter of an hour to every hour.

Cotoin is invaluable in the treatment of the diarrhœa of phthisis.

Fortoin.—*Syn.* METHYLENEDICOTOIN.

Dose.—4 grains (0·25 Gm.).

A formaldehyde compound of Cotoin. A crystalline powder insoluble in water, sparingly soluble in alcohol. Used for dysentery and phthisical diarrhœa.—B.M.J. i./oo,1092; P.J. i./oo,531.

Paracotoin. Obtained from Paracoto Bark, a bark allied to Coto Bark.

Dose.—1½ to 3 grains (0·01 to 0·02 Gm.) every 2 or 3 hours in chronic and acute stomachic catarrh and Asiatic cholera.

Paracotoin is in minute laminar crystals, paler than cotoin. Soluble in ether, chloroform, boiling alcohol, and somewhat in boiling water, but from this it separates on cooling. It appears to be a weaker Cotoin.

COUMARINUM.

A neutral crystalline principle in colourless rectangular plates, may be obtained from Tonka or Tonquin beans, the fruit of *Coumaruna odorata*, is also found in the woodruff *Asperula odorata, Melilotus officinalis, Anthoxanthum odoratum*, &c., but it is now manufactured synthetically from Salicylol, or Salicylic Aldehyde. It is almost insoluble in cold, but readily soluble in hot water, dilute acids, and alcohol, has an agreeable aromatic odour, a burning taste, sublimes unchanged, and the vapour acts very strongly on the brain. 1 part to 50 of iodoform is employed to disguise the odour of the latter.

CREOSOTUM (*Off.*).

Dose.—1 to 5 minims (0·06 to 0·3 Cc.), increased to 30 or even 60 minims, in capsules, or in cod liver, almond, or olive oil, or emulsified.

Obtained from wood tar, soluble in alcohol, chloroform, ether, glacial acetic acid, glycerin, fats and oils, and 1 in about 150 of water. Two kinds of genuine Creosote are met with in commerce—one from pinewood, which is anhydrous and mixes perfectly with oil of turpentine, consisting chiefly of creosol; and the other principally from beechwood, which contains guaiacol, and is more soluble in water. The latter is now made official. According to *Codex Supp.* a good creosote should contain 20 per cent. of guaiacol with 40 per cent. of creosol and 40 of monatomic phenols, which latter should contain about 15 per cent. of cresylols. It rotates the plane of a ray of polarized light to the right (not *left* B.P.), or is inactive (Umney).

Creosote, unlike phenol, mixed with an equal volume of collodion does not gelatinise. It acts locally as a caustic. It is one of the most powerful deodorisers, antiputrescents, and antiseptics. It is used to correct fetor, given to check sickness, added to cod-liver oil for phthisis, and externally in various skin diseases.

For irritable trachea and congested larynx, causing troublesome cough, the dry inhalation of creosote from an oro-nasal or 'ozonic' inhaler is very useful.

Haustus Creosoti. Vic. Park.

Dose.—1 ounce (30 Cc.).

Creosote 5 to 30 minims, Compound Tincture of Gentian 15 minims, Alcohol (90 per cent.) 15 minims, Liquid Extract of Liquorice 30 minims, Water to 1 ounce.

Injectio Creosoti, C.L.T.E.

Creosote 1 to 4 drachms, Liquid Paraffin to 1 ounce; does not form a solution, and

Injectio Creosoti Composita, C.L.T.E.

Creosoti 1, Oil of Wintergreen 1, Almond Oil 1, Castor Oil 5, are introduced into the larynx and trachea by means of an intra-laryngeal syringe.

A 10 per cent. solution in Sterilised Oil (*v.p.* 80) is also used for hypodermic injection.

Mistura Creosoti (*Off.*).

Dose.—$\frac{1}{2}$ to 1 ounce (**15 to 30 Cc.**).

Creosote 1, Spirit of Juniper 1, Syrup 30, Distilled Water 480. Contains 1 minim in an ounce, nearly.

Oleum Morrhuæ cum Creosoto.

Dose.—1 to 4 drachms (**3·5 to 15 Cc.**). Contains 1½ per cent.

Pautauberge's Solution.

A proprietary article containing Calcium Hydrochloro-Phosphate (*sic*) with Creosote.

Dose.—A tablespoonful (containing 2 minims of Creosote and 8 grains of the above salt).

Perles of Creosote. 1 or 3 minims in each, with oil, also **Capsules**, 3 and 5 minims, or more, with oil.

Pilula Creosoti (Martindale).

Dose.—2 to 6 grains (**0·13 to 0·4 Gm.**).

Creosote 1, Curd Soap, in powder 1.

Put the Creosote in a wide mouth stoppered bottle, add the soap, and mix well. Then digest on a water-bath till they combine. Each 2 grains of the mass will contain, as nearly as possible, 1 minim of Creosote.

The writer has found this mass the most convenient for giving Creosote in pills. It combines with other ingredients without decomposition. Calcined magnesia and slaked lime, sometimes recommended as excipients, form compounds with Creosote perfectly insoluble and indigestible. Care should be taken not to mix oxide of silver directly with pure Creosote, else deflagration will occur; but it may be mixed with the above mass, although it is not advisable to prescribe the two drugs together. P.G. iv. orders Creosote 10, Liquorice 19, Glycerin 1, made into pills of 15 centigrammes, containing about 1 minim of Creosote, and rolled in Cinnamon Powder.

Spiritus Creosoti.

Dose.—1 drachm. Creosote 1, Alcohol 90 per cent. 40. Lessens cough and expectoration in chronic bronchitis and phthisis.

Unguentum Creosoti (*Off.*).

Creosote 1, Hard Paraffin 4, Soft Paraffin, white, 5.

Unguentum Creosoti Forte, B.S.H.

Creasote 6 drachms, Yellow Wax 180 grains.

Melt, and stir till cold. Used in psoriasis. Caution.—

Should not be applied to the belly, face, or flexor surfaces of the limbs.

Vapor Creosoti, T.H.

Creosote 80 minims, Light Magnesium Carbonate 30 grains, Water to 1 ounce.

A teaspoonful in a pint of water at 140° F. Usefu in chronic congestion of the larynx and trachea, and in ozœna, fetor of breath in bronchitis, gangrenous lung and syphilitic throats.

Unsurpassed in many cases as a curative agent in tuberculosis of the lung. Treatment must be continuous and extensive. Best results follow from greatest amount borne by patient. Best given in cod-liver oil or milk or by rectal injection in the latter. Intra-pulmonary and inter-tracheal injections questionable, if not injurious.

Useful in pills for diabetes.—L. i./89,702.

Of service in flatulent dyspepsia, ½ minim with sodium bicarbonate after meals. If due to gastric atony bismuth carbonate and pepsin, of each 2 grains may be added.—Th.Gaz. July, 1889,504.

Case of poisoning by creosote—two doses of over ½ drachm taken within a short time. Recovery with no ill effects.—B.M.J.E. ii./92,4.

Creosote vapour relieves gangrene of the lung.—B.M.J. i./99,532.

Is said to produce hæmoptysis.—B.M.J. ii./01,286.

Oro-nasal Inhalations.—Creosote, or a mixtur of equal parts of Creosote and Phenol, is employed to medicate respirators for phthisis.

It is more sedative in its action if mixed with an equal volume of spirit of chloroform, 5 to 15 or 20 minims dropped on the cotton wool at one time.—B.M.J. ii./82,7.

Solutio Creosoti Composita, Brompton H.

Creosote 1, Spirit of Menthol (20 per cent.) 1, Spiri of Chloroform 1, for inhalation.

Creosote Carbonate.—*Syn.* CREOSOTAL. A clea light-brown viscous liquid, almost odourless and tasteless, insoluble in water, soluble in oils; is prepared from beech creosote, and contains the carbonates of guaiaco and creosol. Is said to disagree less than creosote, an has been used in tuberculosis. Breaks up internall into creosote and carbonic acid. *Dose.*—5 to 20 grain

(0·32 to 1·3 Gm.), or considerably increased.—P.J. 1893,686; B.M.J.E. i./96,15.

For phthisis—L. i./98,960. For bronchitis.—L. ii./99,711. Pneumonia curable by.—L. i./01,646.

Capsules of Creosotal contain 5 and 10 minims.

Creosote Phosphate.—*Syn.* PHOSOTE.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

The creosote ester of ortho-phosphoric acid, a yellowish oily liquid, with little odour, taste bitter, insoluble in water, soluble in alcohol. **Taphosote**—*dose*, 20 to 40 grains (1·3 to 2·6 Gm.) alone or in warm milk—the tanno-phosphoric-ester of creosote is stated to be useful in the treatment of a tuberculous condition accompanied by diarrhœa. It is a greyish syrupy liquid.—P.J. i./99,82.

Creosote Phosphite, Creosote-Phosphorous-Ether.—*Syn.* PHOSPHOTAL.

Dose.—5 to 10 grains (0·32 to 0·65 Gm.).

In glacial crystals, used as a substitute for Creosote.

Creosote Valerianate.—*Syn.* EOSOTE.

Dose.—4 to 12 grains (0·26 to 0·8 Gm.).

An oily liquid, soluble in alcohol and ether; checks gastric fermentation and used for phthisis epidermically.

Capsules, each containing 7 minims, are prepared.

Oleocreosote, a pale brown oily liquid, described as an oleic ether of creosote, of which it contains about one-third, is said to be easily assimilable. *Dose.*—10 to 30 minims (0·6 to 1·8 Cc.).—P.J. 1893,183.

Creosoform, a combination of creosote with formaldehyde, in greyish powder, is found to be a methylene derivative (of guaiacol). It combines with tannic acid.—C. & D. ii./99,818.

Guaiaform, a combination of guaiacol with formaldehyde, is a brownish-yellow powder.—L. i./02,912

Guæthol.—*Syn.* Ajacol. PYROCATECHIN-MONO-ETHYL-ESTER. An oily liquid, or purer in crystals resembling thymol or phenol, insoluble in water. Allays pain by direct application.—P.J. i./98,367,504b.

Guaiacol. *Dose.*—1 to 5 minims (0·06 to 0·3 Cc.).

Medicinal Guaiacol is a colourless refractive liquid, and the principal constituent of beech creosote, but pure guaiacol is now prepared synthetically from pyrocatechin in colourless prismatic crystals melting from 83 to 91° F. Is given in dose of 1 to 5 grains in oily solution in capsules. The liquid contains a variable quantity of this substance.—B M.J.E. ii./93,16; P.J. 1894,730,541. The crystals, being more definite in composition, are to be preferred to the liquid containing homologues whose medicinal action is unknown; but, the reputation obtained by guaiacol having been created by the use of the liquid, *the crystals are only dispensed when so ordered.*

Both forms are soluble in alcohol, ether, fats, oils, and glycerin, and slightly in water, with taste and odour resembling, but more agreeable than, those of creosote. Guaiacol is useful in phthisis, particularly in incipient stages, and rarely disagrees. It may be given thus: Guaiacol 1 part, Water 180 parts, Alcohol (90 per cent.) 20 parts. *Dose.*—1 to 4 drachms in water twice or thrice daily, after meals. It may also be given in cod liver oil, which disguises the taste, or the following:—Guaiacol 13·5, Tincture of Gentian 30, Alcohol (90 per cent.) 250, and Sherry to 1,000; two teaspoonfuls two or three times a day in water.

Guaiacol is also used externally, being rubbed into the skin or painted on the skin which is then protected by oiled silk; begin with 10 minims and increase to 30 or more; do not cover more than the space of the palm of a hand at a time. Useful for phthisis and typhoid.

Guaiacol (Synthetic) 1, with Menthol 1, and Camphorated Oil 30, used as an application for facial erysipelas; paint every two hours.—P.J. ii./00,650.

Mistura Guaiacol, G.H.

Guaiacol 4 minims, Alcohol (90 per cent.) 40 minims, Glycerin 30 minims, Oil of Cinnamon 1 minim, Water to 1 ounce.

Perles of Guaiacol contain 1, 2 or 3 minims, dissolved in oil. **Capsules** contain five minims.

Injections of Guaiacol 5 per cent., and iodoform 1 per cent., in sterilised olive oil, *v.p.*80, recommended in tuberculosis; said to lessen cough and expectoration, diminish number of bacilli in sputum, favour cicatrisation of cavities, and lessen fever and night-sweats. *Dose.*—One, increased to three syringefuls (1 Cc. each).—B.M.J.E. i./91,85; ii./91,79,95; i./93,15,35; B.M.J. ii./91,1040; M.C. 1892, Jan. 249, April, 39; Th. Gaz.

1891,344,572 1892,43. A dangerous state of collapse has followed hypodermic injection of guaiacol on several occasions.—L. i./98,222.

Subcutaneous injection of guaiacol has some local anæsthetic effect, but causes much smarting.—L.i./96, 160; P.J.ii./95,168.

Both creosote and guaiacol can be tolerated in large doses, but smaller ones are equally advantageous; no advantage in hypodermic treatment over that by mouth; favourable results only follow continued use.—L. ii./92, 101.

Orchitis, ointment of guaiacol with vaseline, 1 in 10, useful.—B.M.J.E. ii./95,56; P.J. ii./95,471; and for mumps by 5 per cent. ointment.—B.M.J.E. ii./03,83.

Submucous laryngeal injections for tuberculous growths.—L. ii./97,1649; M.C. Dec.18,97,209; Y.B. 1898,156.

Phthisis, good results from large doses, 5 minims in capsules, up to 60 minims in glycerin emulsion, after meals, followed by a drink of milk.—L. i./98, 993.

Guaiacol Benzoas, Guaiacol Benzoate.—*Syn.* BENZOSOL. The benzoyl-ester of guaiacol.

Dose.—4 to 12 grains (0·26 to 0·8 Gm.) in cachet.

In small colourless crystals, almost tasteless and odourless, soluble in chloroform, ether, and hot alcohol, nearly insoluble in water. Is slowly saponified by the gastric juice, so that the guaiacol is liberated gradually, avoiding unpleasant taste and minimising irritation.—P.J. 1890,81; 1891, 81; Th. Gaz. 1891,699; 1892, 115. Useful in incipient phthisis, an agreeable and harmless substitute for creosote.—L. i./92,32; B.M.J. ii./91,1318.

Tablets, 5 grains. *Dose.*—1 or 2.

Useful for diarrhœa of tuberculous subjects.—Pr. li. 214.

Recommended in diabetes mellitus; may at first produce diarrhœa.—L. i./93,560.

Guaiacol Camphorate. *Dose.*—5 to 10 grains in cachets or 5 grain tablets.

A compound of Guaiacol and Camphoric Acid, controls night-sweats and diarrhœa of phthisis.—C. & D.ii./99,122.

Guaiacol Carbonas.—*Syn.* Duotal.

Dose.—3 to 8 grains (0·2 to 0·52 Gm.), gradually increased, in cachets.

A white minutely crystalline substance, tasteless, and with slight odour, soluble in alcohol, insoluble in water. Contains 91·5 per cent. of guaiacol. Given in phthisis, improved appetite, increased weight, and lessened cough, expectoration, and night-sweats. Is unirritating to mucous membrane and digestive organs, being decomposed only on reaching intestine.

In typhoid 15-grain doses successful. Useful in bronchitis.

Phthisis, approved for.—L.i.98,960.

Tablets, 5 grains (0·32 Gm.).

Guaiacol Cinnamate.—*Syn.* Styracol.

Daily dose.—15 grains (1 Gm.).

In white granular crystals, insoluble in water. Recommended for intestinal phthisis.

Guaiacol Phosphite.—*Syn.* Gaiaco-Phosphal.

Dose.—6 to 10 grains daily (·04 to ·06 Gm.).

In white glistening crystals, solubie in alcohol, slightly so in water. Is recommended as a remedy for tuberculosis.

Guaiacol-Salol, Guaiacol Salicylate.

Dose.—15 to 75 grains (1 to 5 Gm.) daily in cachets.

In white shining crystals, insoluble in water. Useful in phthisis and as an intestinal antiseptic.

Guaiacol Valerianas. *Syn.* Geosote.

Dose.—2 to 5 minims (0·12 to 0·3 Cc.) in capsule.

A liquid combination of guaiacol and valerianic acid, having the characteristic odour of the latter. Useful in tuberculosis and chlorosis.—P.J. i./97,425.

Capsules contain 2 and 5 minims.

Guaiacetin. Sodium Pyro-catechin-mono-acetate. *Dose.*—8 grains (0·52 Gm.).

A carboxyl substitution product of guaiacol. A white powder, insoluble in water, used for tuberculosis like guaiacol carbonate. Said to cause no gastric disturbance. —P.J. ii./96,215,290; B.M.J.E. ii./96,11.

Piperidinæ Guaiacolas. *Syn.* Guaiperol.

Dose.—5 to 30 grains (0·32 to 2 Gm.).

A compound prepared by the action of piperidine on guaiacol, in granular colourless crystals with slight creosote odour, soluble 1 in 30 of water, freely in alcohol; solutions are decomposed by mineral acids and alkalis. Useful in phthisis; may be given in solution flavoured with chloroform or syrup of orange. Improved appetite and general strength; no unpleasant effects.—B.M.J. i./97,136; P.J. i./97,81; B.M.J. ii./98,154.

Piperidinæ Tartras.—*Syn.* PIPERIDINE ACID-TARTRATE. *Dose.*—15 grains (**1 Gm.**) three times a day.

Occurs in colourless pleasant-tasting crystals, readily soluble in water.

A powerful solvent of uric acid.—L. ii./98, 198; P.J. ii./99,176.

Effervescent Piperidine Tartrate.

Dose.—1 drachm or more; contains 5 grains in 1 drachm.

Piperidin-para-Sulphamine Benzoate.

Under the name of CALCUSOL, a combination of this salt with potassium bicarbonate is supplied in effervescent form, 5 grains in 60 grains, and is recommended in the treatment of the uric acid diathesis and renal calculus. **Tablets** of this combined salt and potassium bicarbonate are supplied; also **Tablets** 5 grains of the piperidine salt alone.

Thiocol. **Potassium-guaiacol-sulphonate.**

Dose.—15 grains (**1 Gm.**) thrice daily.

In odourless white crystals, soluble in water. Contains about 60 per cent. of guaiacol; is stated to be one of the best preparations for employment in phthisis and similar diseases which require the creosote or guaiacol treatment. As much as 10 or 15 grammes may be given in 24 hours without ill effect.—P.J. i./99,28; L. i./99,240.

For intestinal catarrh.—P.J. ii./01,645.

Infantile tuberculosis, good results.—B.M.J.E. i./01,16.

CUBEBA (*Off.*).

Dose.—30 to 60 grains (**2 to 4 Gm.**) in cachets.

The dried unripe full-grown fruit of *Piper Cubeba*. The genuine—imported from Java—give a crimson colour with strong sulphuric acid, and are free from mace-like taste and odour.—P.J. 1892,771,121.

A content of 22 per cent. Oleo-Resin suggested as a standard.—P.J. ii./02,496.

Cigarettes of the powder are useful for catarrh and excessive bronchial secretion. It is sometimes added to Ferrier's Snuff (*v.p.*124), and is an ingredient of the American specialty, Brown's Troches. Cubebs contain **Oleum Cubebæ**, *dose* 5 to 20 minims (0·3 to 1·2 Cc.), **Cubebin**, in small white needles, and **Cubebic Acid**, a non-crystalline resin, occurring in white powder, which has been recommended for gonorrhœa, in doses up to 15 grains (1 Gm.). These are all contained in

Oleo-resina Cubebæ (B.P. 1885).
Dose.—5 to 30 minims (0·3 to 1·8 Cc.).

Capsules of Cubeb Oil contain 10 minims. For combinations (*v.p.*382).

Tinctura Cubebæ, 1 in 5 Alcohol (90 per cent.), (*Off.*). *Dose.*—½ to 2 drachms. Recommended as an expectorant, taken in linseed tea.—L. i./90,569.

Trochisci Cubebæ, T.H. Contain ½ grain each, with fruit paste. *Dose.*—1 every 3 or 4 hours.

Vapor Cubebæ cum Limone, T.H. Cubeb Oil ½ drachm, Oil of Lemons 10 minims, Light Magnesium Carbonate 20 grains, water to 1 ounce. Has stimulating effect.

CUCUMIS.

Cucumber.—The juice of the fruit of *Cucumis sativus*, is in French Codex to prepare:—

Unguentum Cucumeris.—*Syn.* Fr. POMMADE AUX CONCOMBRES.

Cucumber Juice 1200, Lard 1000, Veal Suet 600, Balsam of Tolu in S.V.R. *q.s.*, 2, Rose Water 10. F.s.a. Is a cooling ointment, used like cold cream.

CURARA.

Curare.—*Syn.* OURARI, URARI, WOURARA, WOURALI.
Dose.—$\frac{1}{20}$ to ½ grain (0·0032 to 0·032 Gm.).

The South American Indian arrow-poison, produced from species of *Strychnos* and other plants. A blackish-brown coloured, dry extract, with a bitter taste; contains some resin, but is nearly all soluble in water.

Curarina, Curarine. *Dose.*—$\frac{1}{400}$ to $\frac{1}{40}$ grain (?).

This, the active principle of Curare, is a most powerful poison, in yellowish-brown powder or deliquescent prisms, with an intensely bitter taste, soluble in water and alcohol, the latter solution being slightly fluorescent. Is not alkaline in reaction, and forms no true salts. In toxicological research, Curarine, like strychnine, with sulphuric acid and potassium bichromate, is coloured first blue, then violet, and later on cherry-red, but the transition is slower than with strychnine; sulphuric acid alone imparts a red colour to solutions containing Curarine, it has no effect on strychnine. The physiological test for Curarine is more valuable.—B.M.J. ii./79,1025.

It is said to exercise no marked physiological action if swallowed (?), but acts as a muscular paralyser if injected subcutaneously.

Researches on.—P.J. 1880-81,491,529,589,693,754; 1890,893,471; L. i./91,46.

Injectio Curare Hypodermica, B.P.C.

Dose.—1 to 6 minims (0·06 to 0·35 Cc.).

Curare, in powder, 5 grains, Distilled Water, a sufficient quantity. Add to the Curare distilled water *q.s.* to form a thin paste, transfer to a funnel plugged with absorbent wool, and gradually add more water until one drachm is obtained.

Hypodermic Tablets are prepared, containing $\frac{1}{12}$ grain of Curare.

In hydrophobia, a case cured by $\frac{1}{3}$ to $\frac{1}{2}$ grain, hypodermically, repeated about every half-hour, as required, to allay the spasms, until these ceased entirely, and paralysis of all voluntary movements became apparent.—M.T.G. ii./77,396.

Its use as a palliative in hydrophobia.—L. ii./81,624.

Cases of tetanus treated by hypodermic injections of Curare. To adults, 4 grains may be exhibited at intervals in the 24 hours, without danger to life.—Dub. Jour. Med. Sci. 1882,307.

Curare prophylactic to strychnine poisoning; also removed tetanus caused by strychnine.—P.J. i./96,133, 298.

DAMIANA.

The leaves of *Turnera microphylla* and *T. aphrodisiaca* are recommended in the United States as possessing aphrodisiac properties. The drug is useful also in hemiplegia and paraplegia, and has been found of service in melancholia.

Extractum Damianæ Liquidum, B.P.C. 1=1.
Leaves in 60 powder exhausted with alcohol 60 per cent.
Dose.—$\frac{1}{2}$ to 1 drachm (1·8 to 3·5 Cc.).

Extractum Damianæ.
Dose.—2 to 10 grains (0·13 to 0·65 Gm.). Is prepared by concentration of the above.

Pilula Damianæ Composita.
Extract of Damiana 2, Phosphorus $\frac{1}{100}$, Extract of Nux Vomica $\frac{1}{8}$. In grains for 1 pill, in grammes for 15. *Dose.*—One, two or three times a day.

Capsules of Damiana Extract are each equivalent to 30 minims of the liquid extract.

DATURINA.

Dose.—$\frac{1}{120}$ to $\frac{1}{60}$ grain (0·0005 to 0·001 Gm.) increased to $\frac{1}{16}$ or more, in solution with diluted sulphuric acid.

Datura Stramonium yields this alkaloid, which is indistinguishable from hyoscyamine in its chemical and physiological properties, *v.p.*305.

Methods of assay of Stramonium leaves with results —yield about 0·3 per cent.—P.J. i./03,426.

Tinctura Stramonii. (*Off.*).
Dose.—5 to 15 minims. Strength 1 in 5 of 45 per cent. alcohol by percolation.

A standard of 0·06 per cent. alkaloid has been suggested.—P.J. i./04,6.

Daturinæ Sulphas.—**Daturine Sulphate.**
Dose.—$\frac{1}{120}$ to $\frac{1}{60}$ grain (0·0005 to 0·001 Gm.) Minute, white, granular crystals, readily soluble in water.

Guttæ Daturinæ, R.O.H. Half per cent.
Ophthalmic Discs contain $\frac{1}{5000}$ grain of Daturine Sulphate in each, combined with Gelatin.

In acute mania it acts like hyoscyamine and atropine in producing sleep.

DELPHINA.

Dose.—$\frac{1}{4}$ to $\frac{1}{2}$ grain (0·016 to 0·032 Gm.) in a pill.

A white or brownish white amorphous alkaloid obtained from seeds of stavesacre, *Delphinium Staphisagria*, and of larkspur, *Delphinium Consolida*. Almost insoluble in water, soluble in alcohol, ether, and dilute acids. It is a heart poison.

Has been given internally in doses as above, in dropsy and spasmodic asthma. Locally, an alcoholic solution or ointment, containing 2 to 8 per cent., causes tingling and transient redness like veratrine; useful in neuralgia, earache, and toothache.

Oleum Staphisagriæ, expressed from the seeds.

One to 6 or 12 parts of perfumed olive or almond oil effectually kills pediculi of all kinds. Remove nits with a mixture of vinegar and proof spirit.

Unguentum Staphisagriæ (*Off.*). — Stavesacre Seeds, crushed, 4, Benzoated Lard 35, heat on a water-bath for 2 hours, strain and press through calico, add Yellow Beeswax 4; dissolve by heat and stir until cold.

Liquor Delphinine Compound. An etherised acetic preparation applied to hollow carious teeth to stop pain; is not given internally.

DIGITALIS FOLIA (*Off.*).

Dose.—½ to 2 grains (0·032 to 0·13 Gm.).

The dried leaves of *Digitalis purpurea*, or foxglove, are used to lessen fever and acute inflammations, also in heart disease with rapid weak pulse, and for cardiac dropsy, for internal hæmorrhages, delirium tremens and spermatorrhœa.

The leaf of the second year proposed. Powdered drug to be used entire.—C.U.D.

Infusum Digitalis (*Off.*). About 1 in 146.

Dose.—2 to 4 drachms (7 to 15 Cc.).

An infusion of digitalis produces as satisfactory results as any other preparation.—P.J. i./01,699.

Infusum Digitalis Concentratum, B.P.C.

Dose.—15 to 30 minims.

Leaves in 20, powder 480 grains are thrice macerated with 15 ounces of water, and after each maceration pressed; first pressings of 10 ounces mixed with 5 ounces of alcohol (90 per cent.); the remainder concentrated to 5 ounces and mixed with that set aside. Is 8 times strength of above. A good medicinal preparation.

Succus Digitalis, B.P.C.

Expressed Juice, 3; Alcohol (90 per cent.), 1.

Dose.—5 to 10 minims (0·3 to 0·6 Cc.).

Tinctura Digitalis (*Off.*). 1 in 8 of 60% alcohol.
Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Strength, 10 per cent. proposed. Prepared by percolation with 70 per cent. alcohol.—C.U.D.

Pilula Digitalis Composita (Baillie's Pill).—**St. George's Hosp.**

Mercurial Pill 2, Digitalis Leaves ½, Squill 1. In grains for one pill; in grammes for fifteen.
Dose.—1, as often as 3 times a day.

Pilula Hydrargyri et Digitalis Composita. St. Bart.

Mercurial Pill 1 grain, Digitalis 1 grain, Squill 1 grain, Extract of Henbane 2 grains.

Digitalis leaves and seeds contain several active crystalline and amorphous principles. They act for the most part as irritants to the skin, mucous membranes. Those with physiological activity slow the pulse and increase cardiac energy.

Digitaline Amorphe (Codex). *Syn.* Chloroformic Digitalin.
Dose.—$\frac{1}{60}$ to $\frac{1}{30}$ grain (0·001 to 0·002 Gm.).

This, the 'Digitaline' of Homolle, is met with in commerce as an amorphous yellowish-white powder, or small scales, inodorous but irritating to the nostrils, intensely bitter, and poisonous. It is practically insoluble in water, but soluble in alcohol and chloroform, and consists principally of a glucoside resembling digitoxin in its action.

Granules de Digitaline (Homolle) contain 1 milligramme ($\frac{1}{65}$ grain). *Dose.*—1 or 2.

Digitaline Cristallisée (Codex). Nativelle's Digitaline.
Dose.—$\frac{1}{250}$ to $\frac{1}{60}$ grain (0·00025 to 0·001 Gm.), in pill.

Is in light, white crystalline tufts of needles, very bitter; insoluble in water, nearly insoluble in ether, soluble in chloroform and alcohol. It consists almost entirely of digitoxin, is cumulative in its action, and very potent; should be prescribed as Digitaline, crystallized (Nativelle).

Granules de Digitaline Cristallisée contain ¼ milligramme in each.

Soluté Officinal de Digitaline Cristallisée. Crystallized Digitaline 1, Glycero-alcohol *q.s.* to measure 1,000.
Dose.—4 to 16 minims (0·25 to 1 Cc.).

Digitalinum Pulverisatum Purum Germanicum. *Dose.* — $\frac{1}{64}$ to $\frac{1}{32}$ grain (0·001 to 0·002 Gm.) consists, according to Kiliani, of the glucosides Digitoxin and Digitonin 40 to 50 per cent. with the so-called Digitalein and Digitalin Cryst. It is a yellowish-white powder soluble in water and alcohol, nearly insoluble in chloroform. Is active, 1 part = about 70 of Tincture. *Is most suitable for hypodermic injection.*

Hypodermic Tablets, $\frac{1}{100}$ grain (0·00065 Gm.).

Digitalinum Crystallisatum.—*Syn.* DIGITONIN (CRYST.). Is soluble to some extent in a mixture of chloroform and alcohol. Possesses little medicinal or physiological activity.

Digitalein (Schmiedeberg) consists of amorphous Digitonin (without typical cardiac action) and crystallized Digitonin.

Digitoxin.

Dose—$\frac{1}{250}$ to $\frac{1}{64}$ grain (0·00025 to 0·001 Gm.).

Crystallized, as prepared by Merck. This is a potent Glucoside, cumulative in action. Soluble about 1 in 100 of absolute alcohol, and soluble in chloroform.

Owing to its insolubility in water, and this being prone to develop fungi, an aqueous vehicle is inadmissible for the administration of digitoxin; the best method is in solution in Glycero-alcohol, recommended to be made by mixing Glycerin 333 with water 146, and diluting with 95 per cent. Alcohol to produce specific gravity 1·0 (about 580 necessary). Solutions may be made containing $\frac{1}{64}$ grain (0·001 Gm.), Digitoxin in 17 minims (1 Cc.) of the mixture. This quantity will approximate 40 drops which may be considered a maximum dose. Suitable either *per os* or as an enema. May also be given in **Syrup**, Digitoxin 0·1, Alcohol (90 per cent.) 200, Distilled Water 750, Syrup to 2,500. *Dose.*—1 to 4 drachms (3·5 to 15 Cc.).

Tablets and Granules of Digitoxin are prepared containing $\frac{1}{250}$ grain ($\frac{1}{4}$ milligramme).

Pilula Digitoxin contains $\frac{1}{250}$ grain.

Antidotes to **Digitalis Preparations** of all kinds.

Emetics, Nitroglycerin, Ether, Spirit of Camphor, Tannin or Gallic Acid 20 grains or strong tea and alcoholic stimulants.

References.

Small doses slow the pulse and increase cardiac energy.—L. ii./84,25.

General summary of physiological action and therapeutic effects of digitalis. Its effects and that of its active principles, are, that they regulate the heart's action, assist a failing circulation and act as diuretics. It is most valuable in mitral incompetence.—B.M.J.E.i./00,52.

Acute poisoning and recovery of a child of two years, after Nativelle's granules.—B.M.J. i./01,338.

Methods of assay and results of examining leaves and extract.—P.J. i./03,425.

Keller's and the Keller-Kiliani reaction are used for identification of the various Digitalis Glucosides, *c.f.* Merck's Reagentien-Verzeichnis, 1903,76.

DUBOISINÆ SULPHAS.

Dose.—$\frac{1}{120}$ to $\frac{1}{30}$ grain (0·0005 to 0·002 Gm.).

Obtained from the leaves of *Duboisia myoporoides;* is usually met with in amorphous whitish granules, very hygroscopic. It is much more powerful physiologically than hyoscyamine.

It dilates the pupil, dries the mouth, checks perspiration, causes headache and drowsiness; on the eye it acts more promptly than atropine.

Cases of toxic symptoms, giddiness, delirium, and dryness of the mouth from use of eyedrops 4 grains to the ounce.—B.M.J.E. i./93,72.

It has been recommended as a sedative in mania and hystero-epilepsy, and for paralysis agitans.

Guttæ Duboisinæ Sulphatis R.O.H. 0·25 in 100.

Ophthalmic Discs are prepared containing $\frac{1}{5000}$ grain of Duboisine Sulphate combined with gelatin.

ELÆOSACCHARA, P.G.

This term is applied to triturations of volatile oils with sugar. They are made of the strength of 1 part by weight of the oil to 50 of sugar, or approximately 2 drops to 60 grains, and should be prepared as required. Those mostly in use are those of **anise, cinnamon,** citron, and peppermint. They are used to disguise the flavour of nauseous powders, that of cinnamon as a corrective with bismuth particularly.

ELATERIUM (*Off.*).

Dose.—$\frac{1}{10}$ to $\frac{1}{2}$ grain (0·0065 to 0·032 Gm.).

The dried sediment from the juice of *Ecballium Elaterium.*

Is a powerful hydragogue cathartic, useful in renal or cardiac disease complicated with dropsy.

Tinctura Elaterii Composita.

Dose.—10 to 30 minims (0·6 to 1·8 Cc.).

Elaterium in powder 1, Chloroform 50, macerate 2 days, then add Alcohol (90 per cent.) 200, and Compound Tincture of Cardamoms 250, macerate 5 days more and filter. Is more active than a corresponding dose of the powder.

Elaterinum, Elaterin (*Off.*).—*Syn.* MOMORDICIN.

Dose.—$\frac{1}{40}$ to $\frac{1}{10}$ grain (0·0016 to 0·0065 Gm.).

The neutral active principle of Elaterium, is in colourless, hard, hexagonal tables, insoluble in water, soluble in chloroform and sparingly in alcohol.

Pulvis Elaterini Compositus (*Off.*).

Dose.—1 to 4 grains (0·065 to 0·32 Gm).

Elaterin 1, Milk Sugar 39. This is a Trituration, *v.p.*511.

ELIXIRS.

These are generally composed of a weak-flavoured syrup, with a fair proportion of alcohol, which latter may account for much of the esteem in which they are held.

For a complete list consult the Index.

Elixir Aromaticum, Aromatic Elixir, U.S.

Compound Spirit of Orange, U.S. 12, Deodorised Alcohol to 250. Add gradually, with constant agitation, Syrup 375, and then Distilled Water 375. Mix with the liquid Precipitated Calcium Phosphate 15, and filter until clear; then add a mixture of Deodorised Alcohol 1 and Distilled Water 3 *q.s.* to 1000. (*Spiritus Aurantii Compositus,* U.S. Oil of Orange Peel 40, Oil of Lemon 10, Oil of Coriander 4, Oil of Anise 1, Deodorised Alcohol to 200).

Dose.—$\frac{1}{2}$ to 2 drachms (1·8 to 7 Cc.).

Elixir Simplex, B.P.C, 1894.

Oil of Bitter Orange 30 minims, Rectified Spirit 6 ounces. Dissolve and add, Distilled Cinnamon Water 7 ounces, Syrup 7 ounces. Filter through paper moistened with proof spirit, and well sprinkled with kaolin, returning the first portions of filtrate until it passes through bright.

Dose.—20 minims to 1 drachm. This quantity may be added to the ounce of any liquid medicine.

Syrupus Aromaticus (*Off.*).

Dose.—½ to 1 drachm (**1·8 to 3·5 Cc.**).

Tincture of Orange 1, Cinnamon Water 1. Mix. Shake with a little powdered talc, filter and add Syrup 2.

Elixir Rhei, B.P.C.

Dose.—1 to 3 drachms (**3·5 to 10·5 Cc.**).

Rhubarb in No. 12 powder 5, Fennel (bruised) 2, Glycerin 3, Sugar 4, mixture of Alcohol 90 per cent. 1, and 3 Aq., *q.s.* to 20.

Moisten the rhubarb and fennel with diluted spirit 15, macerate 48 hours and press. Break up the mass and add more menstruum *q.s.* to produce, after macerating 24 hours and pressing, 15, with the former liquor. After again standing 2 days filter into the glycerin and sugar and dissolve without heat.

Elixir Rubrum.

Dose.—20 minims to 1 drachm (**1·2 to 3·5 Cc.**).

Solution of Carmine (p. 152) 1, Simple Elixir 64. Gives an agreeable flavour and colour to liquid medicines, but is not compatible with acids.

Elixir Ficorum.—*Syn.* SYRUPUS FICORUM.
Elixir or Syrup of Figs.

Dose.—1 to 4 drachms at bedtime or early morning.

Figs cut very small 32 ounces, add Distilled Water 90 ounces, stew at a gentle heat for one hour, then boil and add Senna 16 ounces; digest in a covered vessel for 2 hours; then press slowly and forcibly so as to obtain 52 ounces of liquid; break up and again digest the marc in Boiling Water 20 ounces for 2 hours and press. Mix the Liquors obtained, boil for 3 minutes and when cold add Alcohol (90 per cent.) 9 ounces; agitate gently, set aside 2 hours, and filter. Wash the filter, evaporate or recover the Alcohol by distillation, and concentrate the filtrate to 56 ounces, and in it dissolve Sugar (made warm) 40 ounces. Mix Oil of Peppermint 5 minims, Oil of Cloves 20 minims, Chloroform 25 minims, Alcohol (90 per cent.) 150 minims, and add this to the Elixir with gitation. The product should measure 80 ounces.

EMBLICÆ FRUCTUS.

Dose.—One, two, or more as required. The taste of the pulp is very agreeable.

The fruit preserved in syrup, or crystallised in sugar, of *Myrobalanus emblica*, *Emblica officinalis*, Nelli, or Nili-ramam. Used in India to excite the appetite, and aken after meals for atonic dyspepsia. In the fresh tate, the fruit consists of a fleshy, acidulous pulp nveloping an angular nut. The pulp is rather austere, nd is possessed of purgative properties.

Is a valuable addition to our list of laxatives. It may e taken at dinner or dessert. It is most beneficial for hildren.—B.M.J. i./96,346; L.i./96,557.

Confectio Emblicæ.

The preserved fruit, pulped and freed from nuts, &c.

Dose.—1 or 2 teaspoonfuls. Promotes appetite and cts as a tonic.

Crystallized Emblic Fruits (dry).

Dose.—One, two, or more.

Black or Chebulic Myrobalans, *v.p.*xxi.

ERGOTA.

Ergot of Rye (*Off.*).—*Syn.* SECALE CORNUTUM.

To be not more than 1 year old and to be kept whole, ot in the powdered condition.—C.U.D.

Dose.—20 to 60 grains (1·3 to 4 Gm.) in recent owder infused in boiling water.

Extractum Ergotæ Liquidum. 1 = 1 of Ergot (*Off.*), and C.U.D.

Dose.—10 to 30 minims (0·6 to 1·8 Cc.) or more.

Infusum Ergotæ (*Off.*) 1 in 20.

Dose.—1 to 2 ounces (30 to 60 Cc.).

Tinctura Ergotæ (B.P. 1885). 1 in 4.

Dose.—5 to 30 minims (0·3 to 1·8 Cc.) or more.

Cornutine (Kobert). *Dose.*—$\frac{1}{6}$ grain (0·01 Gm.) daily.

A brownish-grey amorphous alkaloid contained in rgot, very slightly soluble in water. Is said to be an efficacious hæmostatic in hæmorrhage from genito-urinary organs. Raises blood-pressure, but does not cause gangrene. The **Hydrochloride**, in brown scales, is more soluble. *Dose* of either—$\frac{1}{6}$ to $\frac{1}{4}$ grain daily, in divided doses.—L. i./92,766; B.M.J. i./92,500. Has proved effective in spermatorrhœa.

Is not found in all Ergot; is probably a decomposition product of Ergotinine.—Ph. *vide infra.*

Cornutine Citrate is a brown powder, only very slightly soluble in water. *Dose.*—$\frac{1}{12}$ to $\frac{1}{6}$ grain (0·005 to 0·01 Gm.) in pill, daily; an equivalent everal times daily; a sterile injection may be prepared.

Extractum Ergotæ (*Off.*). *Syn.* — ERGOTIN, EXTRACTUM HÆMOSTATICUM.

Dose.—2 to 8 grains (0·13 to 0·52 Gm.).

Ergot, in No. 40 powder, 1000, is exhausted with 60 per cent. alcohol, and the percolate evaporated to 250. To this is added Distilled Water 250, the mixture filtered, Diluted Hydrochloric Acid 47, added, and after twenty-four hours again filtered, Sodium Carbonate 20, added, and the mixture evaporated to a soft extract.

A watery extract should be prepared and be made up to volume with Alcohol 60 per cent.—C.U.D.

It is given to check all forms of passive hæmorrhage.

Tablets and Pills, 1, 2, and 3 grains. *Dose.*—1 to 3.

Capsules of Ergotin contain 3 and 5 grains (0·2 and 0·3 Gm.).

Injectio Ergotæ Hypodermica (*Off.*).

Dose.—3 to 10 minims (0·18 to 0·6 Cc.).

Extract of Ergot 10, Phenol 0·3, Distilled Water, *q.s.* to 30. Should be freshly prepared.

Epistaxis — hypodermic injection into the arm, of 3 grains in 10 minims of warm water, is found of the greatest success.

Ergotin has been suggested as a killer of the parasite in trichinosis.

A dose of Ergotin, injected deeply into the gluteal muscles just before delivery, seldom fails to give perfect uterine contraction.

Ergotin causes spasm of arterioles and rise of blood pressure, by acting directly on the vessels independently of the central nervous system, and is useful in polyuria.

Neither ergot nor iron will induce abortion in pregnant women unless previously disposed (Lombe Atthill).—B.M.J. i./89,350.

Menorrhagia is often controlled by the continued use of ergot.

Night sweats of phthisis much improved under ergot.—Am.M.S.B. 1894,933,977.

For disordered circulation and for headache (hypodermically), alcoholism, hysteria and in acute inflammatory infections—meningitis, pneumonia, pericarditis.—New York Med. Assoc., March, 1903.

Ergotinina, *Ergotinine Cristallisée.*

Dose.—$\frac{1}{200}$ to $\frac{1}{40}$ grain (0·00032 to 0·0016 Gm.).

An alkaloid in minute white crystals, insoluble in water, soluble in alcohol, ether, chloroform, and dilute acids, present to the extent of 0·1 to 0 25 per cent. in Ergot.

Solution hypodermique d'Ergotinine de Tanret.

Dose.—3 to 10 minims (1 Cc. contains 0·001 Gm.).

Ergotininæ Citras.

Dose.—$\frac{1}{150}$ to $\frac{1}{30}$ grain (0·00043 to 0·0022 Gm.).

A soluble salt of the above, in greyish powder.

Hypodermic Tablets are also prepared containing $\frac{1}{200}$ and $\frac{1}{100}$ grain of Ergotinine citrate.

Liquor Ergotæ Aceticus.—*Syn.*—**Extractum Ergotæ Fluidum, U.S.** Contains 2 per cent. of acetic acid, with diluted alcohol as a menstruum. 1 = 1 of Ergot. *Dose.*—10 to 60 minims (0·6 to 3·5 Cc.).—B.M.J. i./88,743,1148.

Liquor Ergotæ Ammoniatus.—1 = 1 of Ergot. *Dose.*—10 to 60 minims (0·6 to 3·5 Cc.).

A preparation of Ergot exhausted by diluted ammoniated alcohol. Ammoniated preparations best.—C.&D.i./01,663.

Pharmaceutically, it has been found that ammonia not only exhausts Ergot of its active medicinal properties, but also secures a uniform, stable preparation; whilst, therapeutically, the combination of ammonia and Ergot is indicated in some forms of post-partum hæmorrhage, &c.

This is an efficient and reliable preparation, as powerful in action, if not more so, than the fresh infusion prepared from recently-powdered Ergot.] . It has been suggested for the relief of sleeplessness, by causing cerebral anæmia by constricting the blood vessels.

Liquor Ergotæ Ammoniatus in dose of ½ to 1 drachm is useful in second stage of labour when the pains are feeble but the passages are normal.

Tinctura Ergotæ Ammoniata (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Ergot 5, Solution of Ammonia 2, Alcohol (60 per cent.) *q.s.* to 20 by percolation. The B.P.C. preparation contained 1 in 2 of Aromatic Spirit of Ammonia.

Acidum Scleroticum.—*Syn.* SCLEROTINIC ACID.

Dose.—½ to ¾ of a grain (0·032 to 0·05 Gm.) hypodermically.

This weak acid principle is, according to Dragendorff, the most active of a series of preparations he obtained from Ergot. It is uncrystallizable, pale brown, darkening with age, is hygroscopic, and soluble in water.

Injectio Acidi Sclerotici Hypodermica.

One grain in 6 minims. *Dose.*—3 to 5 minims.

Should be freshly prepared, or, if required to be kept, 1 per cent. of phenol should be added to the solution, as it is prone to change.

Hypodermic Tablets contain $\frac{1}{16}$ grain (0·004 Gm.) Sclerotic Acid.

As a hæmostatic Sclerotic Acid possesses all the virtues of Ergot. Injected hypodermically, it is preferred to Ergotin, as it causes no inflammation at the seat of puncture.

It accelerates the intestinal peristalsis, and excites contraction both of the pregnant and non-pregnant uterus, pre-existing contractions being intensified; it is not a powerful poison.

ERYTHROL NITRAS

Syn. ERYTHROL TETRANITRATE; NITRO-ERYTHRITE.

Dose.—½ to 1 grain (0·032 to 0·065 Gm.), increased to 3 grains or more in tablet form *vide infra.*

In hard, colourless and tasteless acicular crystals or plates, nearly insoluble in water, soluble about 1 in 60 of absolute alcohol; melting point, 61° C. It is formed by dissolving erythrol (a sugar) in fuming nitric acid, and precipitating by sulphuric acid; is explosive, except when in solution in chocolate.

It is used as a vaso-dilator like nitro glycerin and amyl nitrite, and has a less powerful though perhaps more prolonged action in reducing blood-pressure. Employed in angina pectoris, chronic Bright's disease, nephritis, aneurism, Reynaud's disease, dyspnœa, headache, and nervous affections.

For angina, marked relief, given 3 times a day.—B.M.J. i./99,1088.

To avert paroxysms even half a drachm a day has been taken.—B.M.J. i./98,18,127; i./99,256.

Has been found to be an excellent sedative in lead colic, as it relaxes the painful spasms of the intestinal coats.—Nouveaux Remèdes, 1901,477.

Tabellæ Erythrol Nitratis. *Dose.*—1 or 2.

Contain ½ grain, combined with chocolate; the fat of the chocolate being a solvent of the nitrate. Tablets containing ⅕, ¼ and 1 grain are also prepared.

These tablets are the best method of administration.—B.M.J. i./97,907; ii./99,411.

Præcordial pains promptly relieved by a tablet three times a day.—B.M.J. i./98, 431.

These tablets are quite safe.—B.M.J. i./99,256.

For senile restlessness.—B.M.J. ii./99,1542.

Mannitol Nitrate, Mannitol Hexanitrate.—*Syn.* HEXANITRIN; NITRO-MANNITE.

Dose.—1 grain (0·065 Gm.), increased.

In light acicular quinine-like crystals, melting point, 113° C.; is less soluble in water, but more explosive than erythrol nitrate, and if long kept is liable to decomposition. Requires extra care. Is used similarly to erythrol nitrate, but is not so costly. Its physiological action is not nearly so powerful, but probably more prolonged than that of the former.—B.M.J. ii./95,1213; i./98,528.

Angina attacks of slow development, Mannitol Nitrate useful; action not prompt, but is prolonged.

Tabellæ Mannitol Nitratis, Mannitol Nitrate Tablets.

Contain 1 grain (0·065 Gm.) in each with chocolate—B.M.J. i./98,893.

ERYTHROPHLŒUM.

Casca Bark.—*Syn.* SASSY BARK; ORDEAL BARK. The bark of *Erythrophlœum guineense.*

Tinctura Erythrophlœi.

1 in 10 of rectified spirit.

Dose.—5 to 10 minims (0·3 to 0·6 Cc.).

Erythrophlœinæ Hydrochloridum. *Dose.*—$\frac{1}{40}$ to $\frac{1}{24}$ grain (0·0016 to 0·0027 Gm.).

In yellowish white granular crystals, readily soluble in water. The solution has an acrid, bitter taste. Has the combined action of digitalin and picrotoxin.

In mitral disease, and cardiac dropsy depending on it, is a more powerful remedy than digitalis, its effect on the arterioles is greater, and is useful in dilated heart. It is less cumulative. It is, however, more disagreeable in taste than digitalis.—Amer. Med., June, 1903.

EUCALYPTI FOLIA.

Dose.—5 grains (0·32 Gm.) or more in powder.

The dried leaves of *Eucalyptus Globulus*, or blue gum-tree of Australia, have been employed medicinally in the treatment of ague and bronchitis, and are now much used in Italy for Roman and malarial fevers; also, when coarsely powdered, are employed for smoking in cigarettes in cardiac and aneurismal asthma.

Oleum Eucalypti (*Off.*).

Dose.—$\frac{1}{2}$ to 3 minims (0·03 to 0·18 Cc.) on sugar, emulsified, or mixed with olive oil.

Is principally distilled from the leaves of *Eucalyptus Globulus*, as well as *E. amygdalina*, *E. dumosa*, *E. oleosa*, *E. cneorifolia*, *E. uncinata*, *E. gracilis*, *E. incrassata*, and *E. odorata*. The oil is an antiseptic, and ozonizes the atmosphere whilst oxidizing. It has a pale yellow colour, a spicy taste, producing an after-sensation of coldness in the mouth, a camphoraceous odour; boils between 338° and 392° F.; its official Sp. Gr. is 0·910 to 0·930. It is not caustic, nor should it cause much coughing when inhaled (due to Phellandrene—for inhalation the oil should not have a Sp. Gr. under 0·9), or irritation when applied to the skin or mucous membrane, yet it is destructive to low organisms. It is soluble in oils, fats, paraffins, and alcohol, but only a trace dissolves in water. An emulsion may be made by putting equal quantities of powdered gum arabic and the oil into a dry bottle, adding 40 parts of water, more or less, and shaking well. This is useful as an urethral injection or lotion, and may be given internally in 1 to 4-drachm doses. The oil is useful mixed with an equal quantity of olive oil as a rubefacient for rheumatism, and is a popular prophylactic, inhaled or sprayed, for influenza. The oil of *E. maculata, var. citriodora* has an agreeable odour resembling that of citronella.

An infusion of the leaves 10 grains in an ounce of water lessens the excretion of sugar in diabetes, and is said to have effected cures.—B.M.J. i./02,1295.

Oil from various species described.—Y.B.P. 1902,79.

The fresh leaves of *E. globulus* yield from 0·8 to 1·5 per cent. of oil, but those of other species may produce as much as 4 per cent.—Ph.

Eucalyptene Hydrochloride, Eucalypteol.

Dose.—2 to 6 grains (0·13 to 0·4 Gm.).

In white crystalline scales, with bitter taste, soluble in alcohol, ether, and chloroform, nearly insoluble i glycerin and water, decomposed by alcohol and alkalis Has been given with success in diarrhœa and typhoid, and has relieved cough in phthisis.—L. i./93,44; P.J. 1893,685.

In enema, 30 grains with 2 ounces olive oil and yolk of an egg.

Eucalyptol.—*Syn.* CINEOL; CAJUPUTOL.

Dose.—1 to 4 minims (0·06 to 0·24 Cc.).

Is that portion of the above oil which passes over between 347° and 351° F., and crystallizes at 30° F. It is contained principally in the oils of *E. cneorifolia* (which has a cumin-like odour), *E. dumosa*, and *E. oleosa*, to the extent of 50 per cent. or more. It is preferred to the crude oil for use in the oro-nasal inhalers, as it does not dry up as a varnished coating. It may be obtained from the oil by the action of phosphoric acid, with which it forms a crystalline compound, **Eucalyptol Phosphate.** On addition of water, this splits up, setting free Eucalyptol. The formation of crystallized Eucalyptol Phosphate is an official test for Eucalyptus Oil.—P.J. 1894,501; L. i./95,687.

Phellandrene, which crystallizes with nitrous acid, is a large constituent of the oil of *E. amygdalina*, producing an irritating effect when inhaled.

Tinctura Eucalypti Foliorum, B.P.C.

Dose.—15 minims to 2 drachms (0·9 to 7 Cc.).

One part of leaves with rectified spirit to produce 5 parts of tincture.

Unguentum Eucalypti (*Off.*).

Hard Paraffin 4, Soft Paraffin, white, 5. Melt, and add while hot, Oil of Eucalyptus 1 ounce. Stir till cold. A mild antiseptic dressing.

Vapor Eucalypti, T.H.

Oil 20 minims, Light Magnesium Carbonate 10 grains, Water to 1 ounce. A teaspoonful in a pint of hot water. (Vict. Park has double quantity of oil).

Pessaries, composed of 6 drachms of Eucalyptus oil, and 4 drachms each of oil of theobroma and white wax, divided into 12, one night and morning, or at night only, found useful after parturition, checks fetor and decomposition of lochial discharge.

The oil has been given internally in scarlet fever, and has been applied to the skin. By inunction as an antiseptic.

Inhalation of oil is prophylactic to influenza, relieves the headache and oppression.—L. i./90,127,267 ; i./92, 1185.

Sanosin.

Under this proprietary name a black powder, containing charcoal and sulphur, medicated with a sweet-scented Eucalyptus Oil, has been recommended for fumigating the air inhaled by phthisical sufferers.

EUCALYPTI GUMMI.

Eucalyptus Gum. (*Off.*).—*Syn.* Red Gum.

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

May be made into pills with mucilage of acacia and a trace of glycerin, quickly manipulated.

A ruby-coloured exudation from *Eucalyptus rostrata* and some other species, imported from Australia. From 80 to 90 per cent. of it is soluble in cold water, almost entirely soluble in Alcohol (90 per cent.). Tough, and difficult to powder, it adheres to the teeth when chewed, is intensely astringent to the mucous membrane, useful in diarrhœa, relaxed throats, and given with success to check the purging of mercurial pill administered for syphilis.

This gum should be distinguished from the common Australian or Botany Bay kino, said to be the produce principally of *E. resinifera.* The latter is very resinous and little soluble in water, was made official in **I.C. Add** as **Kino Eucalypti**, *v.p.*xxi.

Decoctum Eucalypti Gummi. 1 in 40.

Boil till dissolved and strain. Used as gargle, and given for diarrhœa in 2 to 4 drachm doses.—L.ii./83,1029.

Extractum Eucalypti Gummi Liquidum B.P.C.

Dose.—30 to 60 minims (1·8 to 3·5 Cc.). in water

Eucalyptus Gum 7, Distilled Water 20. Dissolve b constant shaking, strain and add Alcohol 90 per cent. J.

A styptic. Injected into the nostril stops bleeding from the nose, and applied on lint arrests hæmorrhage from wounds. A tablespoonful to a pint of water forms an astringent injection for the vagina or bowel (Squire) This dilution may be also used as a gargle.

Insufflatio Eucalypti Gummi.

Eucalyptus gum in fine powder 1, Starch 1.

Applied by means of an insufflator, is a powerful astringent in hæmorrhage and relaxed conditions of the larynx and trachea. It does not thus affect the palate or appetite.

Syrupus Eucalypti Gummi.

Liquid Extract of Eucalyptus Gum 5, Sugar 3. Dissolve. *Dose.*—30 to 60 minims (1·8 to 3·5 Cc.).

Tinctura Eucalypti Gummi.

Eucalyptus Gum 1, Alcohol (90 per cent.) 4. Shake till dissolved and strain. *Dose.*—20 to 40 minims (1·2 to 2·4 Cc.). 1 part to 7 of water forms a very astringent gargle.

Trochisci Eucalypti Gummi. (*Off.*).

Contain 1 grain (0·065 Gm.) in each, with fruit paste.

Trochisci Eucalypti Compositi.

Potassium Chlorate 2 grains, Cubeb Powder ¼ grain, Eucalyptus Gum 1 grain. With fruit paste, and are marked C.E. Useful in congested and relaxed throats, especially when accompanied by arrest of mucous secretion.

EUONYMI CORTEX (*Off.*).

The Root Bark, obtained from *Euonymus atropurpureus*, the wahoo or spindle-tree.

Extractum Euonymi Siccum. **Dry Extract of Euonymus.** (*Off.*). *Syn.* EUONYMIN.

Dose.—1 to 2 grains (0·065 to 0·13 Gm.).

The bark in No. 20 powder is percolated with 45 per cent. alcohol, the percolate concentrated, calcium phosphate added, and the mixture evaporated and reduced to powder. It must be well corked, and kept cool and dry, or it cakes together again. Possesses tonic, hydragogue cathartic, diuretic, and antiperiodic properties.

Pilula Euonymin.

Euonymin 2 grains (0·13 Gm.), Extract of Henbane *q.s.*, for one pill; take at bedtime. A cholagogue stimulant producing no depression or headache; requires to be followed by a saline aperient in the morning.

One grain, combined with 4 grains iridin, is a successful purging dose.

Tablets, Euonymin, $\frac{1}{6}$, $\frac{1}{2}$ grain.

Extractum Euonymi Liquidum.

1 = 1 of bark, treated with Alcohol (90 per cent.) 4 water 1.

Dose.—10 to 60 minims (0·6 to 3·5 Cc.).

Tinctura Euonymi, B.P.C.

Dose.—10 to 40 minims (0·6 to 2·4 Cc.).

Euonymus Bark in No. 20 powder 1, Alcohol (90 pe cent.) 5. Moisten the powder, and macerate for 2 hours; then percolate to 5.

EUPHORBIA PILULIFERA.

The dried Snake Weed or Cat's Hair, an Australia plant, is used for asthma, bronchial affections, paroxysm dyspnœa, laryngeal spasm, whooping-cough, angin pectoris, and in all affections of the pneumogastri It appears to act directly and solely on the respirato and cardiac centres.—L. ii./91, 505. Useful in coryz hay fever, and asthma.

Decoctum Euphorbiæ Piluliferæ.—1 in 40.

Dose.—2 ounces (60 Cc.) twice daily.

Extractum Euphorbiæ Piluliferæ (Aqueous).

Dose.—½ to 1½ grains (0·032 to 0·1 Gm.).

Tinctura Euphorbiæ Piluliferæ, B.P.C.

1 in 5 of proof spirit.

Dose.—10 to 30 minims (0·6 to 1·8 Cc.).

EXTRACTUM CARNIS.

Extract of Meat.—*Syn.* LIEBIG'S EXTRACT; LEMCO. It contains little or no albuminous principles or gelatin, but consists of creatin, creatinin, globulin, and urea, with organic potash and other salts. A food for nvalids and healthy persons; is used as a flavouring o add to soups, beef-tea, &c., and it is a *nerve* food llied to tea.

Numerous similar preparations are sold under fancy rade names, *e.g.*, BOVRIL, INVALID BOVRIL, BOVRIL BEEF JELLY, BOVRIL LOZENGES and TABLETS, OXO and BOVININE.

Yeast extracts have been made and substituted for meat extracts; a test has been published for detecting his substitution.—P.J. ii./03,516,704, *vide* also p.156.

Fersan.

Dose.—30 to 80 grains (2 to 5 Gm.) 3 times daily.

An iron, phosphorus and blood compound given in næmia.—B.M.J.E.ii./00,20; P.J.i /01,37.

It is sold in packages of 50, 100 and 250 grammes.

Tablets 0·5 and 0·25 Gm.

Concentrated Beef-Tea.

A firm jelly, sold in ¼ and ½ lb. tins, also in skins, ontains the natural gelatin of the meat, and, diluted, rms a nutritious substitute for true beef-tea.

Beef Bouillon is sold in 2, 4 and 8 oz. tins and in glass jars.

Beef Tea Jelly is also made.

Meat Juice (Brand's).

A teaspoonful in a wine-glassful of water is a useful ick-me-up.

Is prepared by cold process resulting in the retention f the full activity of the juice of the raw beef.

Essence of Beef. Sold in 2 and 4 oz. tins; also in bottles.

A soft, transparent, amber-coloured jelly, prepared om beef by exhausting with tepid water. It is agreeble to the palate and stomach of a delicate invalid; ill often be relished when all other food is repelled, and useful in allaying obstinate vomiting. It is best ken cold by teaspoonfuls, as desired, with or without little bread and wine. Similar preparations are made om **mutton** and **chicken**.

Beef, Chicken, Mutton and Veal Peptones are also prepared.

Restorative Essence of Beef.

Is made from fresh beef, freed from fat, and choppe up fine—1 pound mixed with distilled water 8 ounces add 5 drops of hydrochloric acid, and 60 grains or les of salt; stir well and allow to macerate for 3 hours strain. The product has an agreeable taste, and shoul be taken cold. *Dose.*—A wine glassful or mor (Ringer). It is also prepared *Peptonised*, by digestio with pepsin at the body temperature.

These are best freshly prepared for the patient.

Raw meat advised for tuberculosis.—B.M.J.E ii./01,24.

Turtle Jelly and Soup are suitable for invalids.

Meat Lozenges.

Sold in boxes; are savoury, gelatinous essence of bee lozenges, and contain substantial support for traveller in a portable form.

Beef Tea Tabules are made each containing suffi cient for a breakfast cupful of beef tea—ar convenient, particularly for travelling.

Peptonised Beef Jelly.—Pancreas, *v.p.*389.

Peptonised Beef Suppositories, *v.p.*400.

Meat Juices, **Liquor Carnis** and others.

Dark, reddish-brown liquids consisting of the expresse juice of meat concentrated at a low temperature in vacu A teaspoonful is added to 3 tablespoonfuls of cold or tepi water, and taken in tablespoonful doses or more for sickness or exhaustion. Hot water coagulates the albume in it.

Capsulæ Cruoris. BLOOD CAPSULES.

These contain 20 grains of the red corpuscular matte of fresh sheep's blood. They are freshly prepared an the patient should receive his supply twice weekly They are stated to be of great value in anæmia, debilit and marasmus.

In this direction they should prove of greater utilit than the customary dried blood preparations, as th blood is in an easily assimilable condition, and bein coated with an easily soluble white gelatin coating th capsules are not unsightly to the patient as are some the liquid compounds.

Sanguis Bovinus Exsiccatus, Desiccated Blood. An American nutrient preparation.

Blood freed from fibrin, evaporated, at a low tempera-ure, to dryness. Is in blackish-red, opaque scales, like artarated iron in appearance, readily soluble in cold vater. One part in 8 of tepid water may be used as an nema; the same strength, with the addition of a little lycerin and brandy, to keep the mixture, is recomnended to be given in tablespoonful doses; or it may e given powdered, put into cachets.

Blood Preparations, a résumé, dividing same into groups: (i.) colouring matter of blood unchanged or vith slight traces of Methæmoglobin, *e.g.*, Pfeuffer's Iæmoglobin Extract and Hommel's Hæmatogen (which onsists of defibrinated bullock's blood with Malaga Wine nd glycerin); (ii.) combinations of Methæmoglobin and Hæmatin, *e.g.* Hæmoglobin Lamellæ (Merck); (iii.) in which the normal absorption lines of the blood cannot e identified, *e.g.* Hæmol (Kobert) and Hæmogallol Kobert), *v.p.*532.—P.J. ii./00,258.

Nutrient Powder (Brand's).

As a paste (*e.g.* on bread and butter) or mixed with ther food is very palatable—it retains the nutritive alue of fresh meat.

Somatose. A light yellow granular powder, easily oluble in water, prepared from meat and consisting rincipally of albumose. It is odourless and nearly asteless and may be given in any liquid, up to an ounce aily.—P.J. ii./96,246. Several cases rapidly gained trength.—B.M.J.E. i./96,36,56,67; Therap. 1900, p. 34. Greatly assists lactation.—B.M.J.E. i./98,31.

Liquid Somatose. A syrupy form of above, is nore convenient for use.

Ferro-Somatose, Iron Somatose.

A tasteless brown powder soluble in water, containing bout 4·5 per cent. of ferric oxide combined with lbumose. Useful in chlorosis and anæmia.

Dose.—75 to 150 grains (5 to 10 Gm.) daily.— i./98,872.

Lacto-Somatose. Milk Somatose.

Contains the albumoses of milk, desiccated. Given a food similarly to Somatose.

Eucasin, Protene, Sanose and **Tropon** ar albuminoid food preparations similar to Somatose.

Savore Nutrient Food.

A new preparation of milk and cereal proteids an albumoses with carbohydrates.

Plasmon. This preparation is produced from milk It is a soluble unaltered milk albumen (Casein containing the original organic salts. It possesse nutritive properties, and is easily digested.

Plasmon Biscuits, Arrowroot, Cocoa, and Chocolat are prepared.

Has been found of value in gastric diseases. I strengthening.—L. ii./00,1494.

Casein is employed for estimating the digestive actio of pepsin, pancreatin, and papain.—Y.B.P., 1902,69.

Albumen Ovi Siccum.

Dose.—Ad lib.

Yellowish, transparent, horn-like pieces, should b easily soluble in about 10 parts of water, producing neutral solution. Insoluble in alcohol and ether.

Albumen e Sanguine.

Dose.—Ad lib.

Is prepared by inspissating blood serum. Brow horn-like scales, not so soluble in water as the above.

FEL BOVINUM PURIFICATUM.

Purified Ox Bile (*Off.*).

Dose.—5 to 15 grains (0·32 to 1·0 Gm.).

A dark greenish brown mass of extract consistence having a bitter-sweet taste, is soluble in water an in alcohol. It is prepared by extracting the alcoho soluble constituents of ox gall, and is composed of bil salts, cholesterin, lecithin and bile pigments. It i best given in keratin coated pills or capsules.

Ox gall is an emulsifier of fat and a stimulant to th action of the liver. Pig's gall has also been used.

Fel Bovinum Exsiccatum.—A dry powder give in doses of 5 to 10 grains in cachets.

Capsules of Fel Bovinum contain 5 grains each. Also **Tablets,** Keratin-coated, containing 5 grains.

FERRUM (*Off.*).

Ferri Bromidum, **Ferrous Bromide.**

Dose.—3 to 10 grains (0·2 to 0·65 Gm.).

Prepared by the direct combination of bromine with metallic iron in the presence of water, and evaporating he solution till, when cooled, it will solidify. In greyish-vhite deliquescent masses, which, on exposure to the air, cquire a brown colour from oxidation.

Syrupus Ferri Bromidi. B.P.C.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Iron Wire, free from oxide	½ ounce.
Bromine	533 grains.
Refined Sugar	14 ounces.
Distilled Water... ...	*q.s.* to 1 pint.

Dissolve the sugar in 6 ounces of water, by the aid of eat. Place the iron wire with 4 ounces of water into a int flask, and surround it with cold water. Then add he bromine in successive quantities; shake occasionally ntil the froth becomes white, and the reaction is complete. Filter the solution into the warm syrup, and add, necessary, distilled water *q.s.* to 1 pint.

Each drachm contains about 4½ grains of ferrous bromide. The U.S. syrup is stronger—contains 10 per cent.

Syrupus Ferri Bromidi cum Strychnina. —*Syn.* SYRUPUS FERRI ET STRYCHNINÆ HYDROBROMATUM.

Dose.—1 drachm = $\frac{1}{64}$ grain Strychnine (in early litions $\frac{1}{32}$ grain) and about 4½ grains of Ferrous Bromide.

Strychnine 1, Diluted Hydrobromic Acid 60, Distlled Water 250; dissolve and add Syrup of Ferrous romide to 3,500.

In one drachm of this syrup one grain of acid quinine ydrobromide is dissolved to form

yrupus Ferri Bromidi cum Quinina et Strychnina. B.P.C.—*Syn.* SYRUPUS FERRI QUININÆ ET STRYCHNINÆ HYDROBROMATUM, 1894.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

yrupus Ferri Bromidi cum Quinina. B.P.C. —*Syn.* SYRUPUS FERRI ET QUININÆ HYDROBROMATUM, 1894.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Prepared as the last, omitting the Strychnine.

Ferri Carbonas Saccharatus. (*Off.*).

Dose.—10 to 30 grains (0·65 to 2 Gm.), in pills or cachets.

Ferrous oxycarbonate partially oxidized and mixed with sugar, the mixture containing about one-third of its weight of anhydrous carbonate.

One drachm doses are useful in chlorhæmia.

Capsules and Tablets of Saccharated Iron Carbonate, contain 5 grains (0·32 Gm.).

Pilula Ferri Carbonatis (B.P. 1885). Saccharated Iron Carbonate 4, Confection of Roses 1.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

Better made with simple syrup, and is preferable to Blaud's Pill; useful in anæmia.—B.M.J. i./91,274; L. i./91,292.

Pilula Ferri (*Off.*). *Syn.* BLAUD'S PILL.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

Exsiccated Ferrous Sulphate 15, Exsiccated Sodium Carbonate 9·5, Gum Acacia 5, Tragacanth 1·5, Syrup 15, Glycerin 1, Distilled Water 2, or *q.s.* Mix the Syrup, Glycerin and Water, add the Iron, and then quickly the Sodium Carbonate, mix thoroughly. Set aside 15 minutes, or until the reaction is complete; add the gums and incorporate thoroughly. If divided into 5-grain pills, each pill will contain about 1 grain of Ferrous Carbonate.

With official sanction a smaller quantity of Reduced Iron would tend to prevent oxidation.—P.J. ii./03,916.

Blaud Pill Estimation.

The white or other coating having been carefully removed the weight of two pills should be carefully noted. They are dissolved in a beaker in a small quantity of water, say 15 Cc. with Sulphuric Acid 5 Cc. Decinormal solution of Potassium Bichromate (4·87 Gm. in 1,000 Cc.) is then run in until a drop of the solution no longer gives a blue colour with drops of Potassium Ferricyanide solution arranged on a white tile. Multiply the number of Cc. of Bichromate solution used by 0·0115 to obtain the amount of Ferrous Carbonate in grammes in the 2 pills.

Capsules of Blaud Pill each equal to 5 grains of the official pill are also prepared.

Pilulæ Ferri Carbonici. **P.Aus.Add.**

Precipitated Ferrous Sulphate 10, Sugar 4, Potassium Carbonate 5, Glycerin 6, mix well. Add Magnesium Oxide 1, Althæa Root in powder 14. Divide into 200 pills, each of which will contain about 0·01 Gm. f metallic iron.

Pilula Ferri Carbonici Blaudii. **P.G. iv.**

Exsiccated Ferrous Sulphate 9, Sugar 3, Potassium Carbonate in fine powder 7, Calcined Magnesia 0·7 Althæa Root in fine powder 1·3, Glycerin 4 (or less). Beat to a mass, divide into pills weighing 0·25 Gm., and ust with lycopodium.

Chlorosis of young females best treated by a course of Blaud's Pills, increased up to 15 daily.—L. i./92,517.

Tablets, 4 and 8 grains. *Dose.*—1 to 4 four-grain, r 2 eight-grain Tablets, and also 4 gr. with Arsenious Acid $\frac{1}{64}$ grain. *Dose.*—1 to 4.

Capsules are also made in the following combinations.

Blaud Pill 5 grains with Aloes $\frac{1}{2}$, 1 grain.
„ „ 5 grains with Arsenic $\frac{1}{100}$, $\frac{1}{50}$, $\frac{1}{30}$ grain.
„ „ 5 grains with Cascara Extract, 3 grains.
„ „ 5 grains with Iron Arsenate, $\frac{1}{8}$ grain.
„ „ 5 grains with Nux Vomica Extract, $\frac{1}{4}$ grain.
„ „ 5 grains with Quinine Sulphate, 1 grain.

Mistura Ferri Composita (*Off.*). *Syn.* GRIFFITH'S MIXTURE.

Dose.—½ to 1 ounce (15 to 30 Cc.).

Ferrous Sulphate 5, Potassium Carbonate 6, Myrrh 2, Sugar 12, Spirit of Nutmeg 9, Rose Water *q.s.* o 875.

The mixture is best kept of double strength, and the ron salt (2½ grains to each ounce) added when dispensed.

Ferri Perchloridum, Ferric Chloride.

(With 12 molecules of water of crystallization.)

Dose.—2 to 8 grains (0·13 to 0·52 Gm.).

The official preparations of Ferric Chloride are:—Liquor Ferri Perchloridi, *dose,* 5 to 15 minims; Liquor Ferri Perchloridi Fortis, *dose,* 1 to 4 minims; and Tinctura Ferri Perchloridi, *dose,* 5 to 15 minims. They are incompatible with infusions, &c., containing annin, with the alkalis, alkaline carbonates, iodides, alicylates and mucilage of acacia. The tincture, composed of strong liquor 1, alcohol (90 per cent.) 1, water *q.s.* to 4, is the most generally used, and most valued preparation of iron for internal administration in anæmia, chlorosis, &c. If diluted from well-prepared strong Liquor, the tincture is more stable than the weak Liquor, which, for economy's sake, often supplants it. The strong Liquor is generally employed topically as a styptic or pigment; for this purpose, it has the disadvantage of containing a little more free acid than chemically neutralises the iron as perchloride. As a hæmostatic, therefore, the solid crystallized perchloride of iron containing 12 molecules, 40 per cent. of water, or a strong solution of it, is preferred. This salt is prepared by carefully evaporating the stronger official solution and setting aside to crystallize. It is in pale orange-yellow opaque crystalline masses, very deliquescent, and entirely soluble in water.

A **Liquor Ferri Perchloridi Fortis** of B.P. Sp. Gr. 1·42 may be made by dissolving Ferric Chloride, with 12Aq. 5 parts, in Distilled Water 2 parts.

T. H. orders for **Nebula Ferri Perchloridi,** 5 grains; for **Pigmentum Ferri Perchloridi** 60 grains to 120 grains of this salt to each ounce of solution.

Glycerinum Ferri Perchloridi, G.H., U.C.H. have Ferric Chloride 1, Glycerin 4. For use as a paint. Mid. H. has Liquor Ferri Perchloridi 1, Glycerin 1.

Glycerin covers its metallic astringent taste when given internally, and modifies the styptic properties of Ferric Chloride partially by its viscosity, and partially by reducing it from the ferric to the ferrous state.

Löffler's Pigment for Diphtheria.

Menthol 10, Toluol *q.s.* to 36, Ferric Chloride Solution 4, Absolute Alcohol to 100. To apply on wadding every 3 hours.

'**Collapsubes**' (*v.p.*217) with rectal tube contain Ferric Perchloride 1 in 40 with vaselin basis for piles.

Tinctura Ferri Muriatis. P.L. and Ed. P.

Dose.—10 to 30 minims (**0·6 to 1·8 Cc.**).

Sesquioxide of Iron (prepared by precipitation of ferrous sulphate with sodium carbonate) 6 ounces, Muriatic Acid 1 pint. Digest three days; add Rectified Spirit 3 pints, and filter. Contains some Ferrous Chloride, and is preferred by some practitioners.

Mistura Ferri Amara. U.C.H.

Solution of Ferric Chloride 30 minims, Chloroform Emulsion 5 minims, Infusion of Quassia to 1 ounce.

Mistura Ferri Aperiens. U.C.H.

Magnesium Sulphate 30 grains, Ferrous Sulphate 2 grains, Diluted Sulphuric Acid 2 minims, Peppermint Water to 1 ounce.

Mistura Ferri Arsenicalis. U.C.H.

Citrate of Iron and Ammonium 8 grains, Arsenical Solution 5 minims, Tincture of Calumba 30 minims, Water to 1 ounce. *Dose.*—½ to 1 ounce.

Mistura Ferri Perchloridi. U.C.H.

Solution of Ferric Chloride 15 minims, Glycerin 1 5 minims, Chloroform Water to 1 ounce.

Mistura Ferri Salina. U.C.H.

Potassium Citrate 22 grains, Solution of Ferric Chloride 24 minims, Chloroform Water to 1 ounce. The styptic taste of iron is masked in this mixture, as a double decomposition occurs between the iron and the potash salt. If to 30 minims of the solution of Ferric Chloride 15 minims of the Solution of Ammonium Citrate be added, its styptic taste is effectually disguised.

Liquor Ferri Chloroxidi.

Dose.—10 to 30 minims (0·6 to 1·8 Cc.).

Strong Solution of Ferric Chloride 4, Distilled Water 40. Mix, and add in excess, Solution of Ammonia, *q.s.*; collect, wash well the precipitate, stir, and dissolve it with a gentle heat in Strong Solution of Ferric Chloride 1, Distilled Water *q.s.*, to make when filtered 20.

Liquor Ferri Oxychlorati, P.G., is about one third weaker than the above.

This is a basic solution of Ferric Chloride, of the same strength as the tincture. By placing this solution on a septum floating in water, it may be further freed from chloride, and rendered less styptic in taste, forming

Liquor Ferri Dialysatus (**B.P.** 1885).—Sp. Gr. 1·047.

Dose.—10 to 30 minims (0·6 to 1·8 Cc.).

The last two preparations, made as directed, are dark reddish-brown in colour, and contain about 5 per cent. of ferric oxide. The strength of the latter will be slightly variable, as some of the iron passes through the septum.

These two preparations of iron are useful when the strong acid preparations of iron cannot be borne by the stomach, but they are compatible with few other medicines, they will not bear dilution with common water, or with much distilled water without depositing the oxide. They ought, therefore, to be supplied to the patients as "drops," undiluted, or mixed with glycerin.

Glycerinum Ferri Dialysati.

Dialysed Iron Solution 1, Glycerin 2. Keeps well, and is palatable. *Dose.*—1 drachm (3·5 Cc.).

Dialysed iron is useful as an antidote to arsenic—much superior to the moist peroxide; 1 ounce doses should be given repeatedly, preceded by a dose of common salt or sodium bicarbonate, *v p.*94.

Ferrum Oxydatum Saccharatum, P. Aus. Add.; P.G. iv. Saccharated Ferric Oxide.

Dose.—10 to 40 grains (0·65 to 2·6 Gm.).

Sodium Carbonate 15, dissolved in Water 30, to this gradually add Ferric Chloride Solution 30, cold Distilled Water 600; mix with the above Sodium Carbonate 15 dissolved in Water 600. Set aside, decant, wash the precipitate, collect and press gently, mix in a porcelain dish with Sugar 25, Soda Ley (Sp. Gr. 1·17) 3. Heat in a water-bath, add Sugar 70 and, stirring continuously, evaporate to dryness to form a reddish-brown powder. Should contain at least 2·8 per cent. of metallic iron.

Liquor Ferri Oxydati Saccharati. *Dose.*—½ ounce.

Under this name a solution is sold on the Continent containing about 5 per cent. of the above, flavoured with Cinnamon or Vanilla.

Carniferrin and **Ferratin.** German specialties.

Dose.—8 to 15 grains (0·52 to 1 Gm.).

Prepared from meat and iron; are tasteless brown powders readily assimilated; recommended for anæmia and chlorosis.—B.M.J. ii./02,11.

Triferrin.

Dose.—15 grains perdiem after meals in divided doses.

A brownish yellow powder insoluble in water. Said to contain 21 per cent. of Iron and nearly 3 per cent. of Phosphorus. Is given in anæmia, chlorosis and in phthisis.—B.M.J.E. i./04.44.

Liquor Ferri Albuminati (after Dieterich *Liquids to be weighed*). Same strength as P.G. iv.
Dose.—1 to 4 drachms (3·5 to 15 Cc.).

Mix	Solution of Chloroxide of Iron	120
with	Distilled Water at 50°C.	4000
Dissolve	Dried Egg Albumen (*v.p.*254)	30
in	Distilled Water at 50°C.	4000

Add the albumen solution to the iron solution, and exactly neutralise the mixture with

Solution of Soda diluted with 5 times its bulk of water.

Let the resulting precipitate settle, pour off the liquid, and wash the precipitate repeatedly with

Distilled Water at 50° C.

until the washings are free from chloride. Collect and drain it on linen, then transfer it to a tared bottle, and dissolve by adding

	Solution of Soda	18·3

To the resulting solution,

add	Alcohol (90 per cent.)	160
diluted with	Cinnamon Water	90
and then	Distilled Water to	1000

Contains about 4 of Iron in 1000. Is easily digested and borne by a delicate stomach.

Liquor Ferri Peptonati (after Dieterich; *Liquids to be weighed*).

Dose.—1 to 4 drachms (3·5 to 15 Cc.).

Dissolve	Dried Egg Albumen (*v.p.*254)	10
in	Distilled Water	1000
Add to this	Pepsin	0·5
and	Hydrochloric Acid	14

Digest the mixture for 12 hours at 40° C. (104° F.) cool and neutralize with Solution of Soda;

then add	Solution of Chloroxide of Iron	120
diluted with	Distilled Water	1000

Again neutralize exactly with

Solution of Soda diluted with 7 times its bulk of water.

Pour off the liquid from the precipitate when it has subsided, and wash the precipitate with

Distilled Water until free from chloride.

Collect and drain the precipitate on linen, transfer to a tared bottle and dissolve by addition of

Hydrochloric Acid... ... 1·17

warming slightly to promote solution,

Now add Simple Syrup 10
Compound Tincture of Cinnamon ... 10
Alcohol (90 per cent.) 150
and Distilled Water to... 1000

This solution is clear by transmitted light, but opaque by reflected light.

Liquor Ferri Peptonati cum Quinina.

Dose.—1 to 4 drachms (3·5 to 15 Cc.). Contains ½ per cent. of Quinine Hydrochloride.

Liquor Ferro-Manganesii Peptonati.

Dose.—1 to 4 drachms (3·5 to 15 Cc.). Contains, in addition to Iron, 0·1 per cent. of Manganese.

Extractum Ferri Pomatum is prepared by digesting iron filings in juice of sour apples.

Tinctura Ferri Pomata, P.G.

Dose.—15 to 30 minims (0·9 to 1·8 Cc.).

Ferrated extract of apples 1 part, Cinnamon Water (P.G., containing 10 per cent. of alcohol) 9 parts. Dissolve and filter.

Liquor Ferri Acetatis (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Ferric hydrate is precipitated by means of excess of ammonia from solution of ferric sulphate 5, diluted with water 40; it is washed, drained, squeezed, and lastly dissolved in glacial acetic acid 3, and water added *q.s.* to 40; after standing, decanted.

This solution does not decompose iodides.

Tinctura Ferri Acetatis, B.P, 1885, was of the same strength.

Dose.—5 to 30 minims (0·3 to 1·8 Cc.).

Syrupus Ferri Iodidi (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Contains Ferrous Iodide 1 in 10 (1 gr. in 11 m.), and is slightly stronger than B.P. 1885. If precipitated by sodium carbonate solution the filtrate should stand a volumetric test with silver nitrate solution. C.U.D. proposes 5 per cent. of anhydrous ferrous iodide.

Exposure to sunlight, and addition of small quantity of tartaric acid or hypophosphorous acid or 20 grains of sodium hyposulphite to the ounce of syrup help to preserve or restore its colour.

Capsules are prepared each equivalent to 10 and to 30 minims of the syrup.

Liquor Ferri Iodidi. *Dose.*—3 to 6 m. (0·18 to 0·35 Cc.).

The above *sine* sugar. 10 minims are equivalent to 1 drachm of the Syrup.

Pilula Ferri Iodidi (B.P. 1885).

Dose.—3 to 8 grains (0·2 to 0·52 Gm.).

Shake carefully in a stoppered bottle Iodine 80, Water 46, with Iron Wire 40; add decanted Solution to Sugar 70; mix and combine with Liquorice Powder 140. In dividing this into pills, roll them in a mixture of reduced iron and lycopodium, and varnish.

Ferri Phosphas. **Iron Phosphate** (*Off.*).

Dose.—5 to 10 grains (0·32 to 0·65 Gm.).

A slate-blue amorphous powder containing at least 47 per cent. of ferrous phosphate, with ferric phosphate and oxide.

Ferri Phosphas Solubilis, U.S., is a soluble sodio-citro-ferric phosphate.

Syrupus Ferri Phosphatis (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.). One drachm contains 1 grain of anhydrous ferrous phosphate. It is best kept in bottles quite full.

Syrupus Ferri et Manganesii Phosphatum.

May be made by dissolving ½ grain (0·032 Gm.) manganese phosphate in each drachm of the last.

Syrupus Ferri Phosphatis Compositus, B.P.C.

Syn. Chemical Food; Parrish's Syrup (*modified*).

Dose.—½ to 2 drachms (1·8 to 7 Cc.).

Iron Wire, free from oxide ...	37½ grains.
Concentrated Phosphoric Acid, Sp. Gr. 1·5 ...	1 ounce.
Distilled Water	5 drachms.

Place in a glass flask, so that the liquid completely covers the wire, plug with wool, and heat gently till dissolved. Now take of

Precipitated Calcium Carbonate	120 grains.
Concentrated Phosphoric Acid	4 drachms.
Distilled Water	2 ounces.

Mix and add

Potassium Bicarbonate ...	9 grains.
Sodium Phosphate ...	9 grains.

Then add the solution of phosphate of iron, filter, and set aside.

Cochineal	30 grains.
Distilled Water	7½ ounces.

Boil 15 minutes, cool and filter, pouring over the filter sufficient water to produce seven ounces. To this add

Refined Sugar	14 ounces.

Heat till dissolved and strain. When cold, add the solution of phosphates, and sufficient water to measure 1 pint. Contains in each drachm about ½ grain Phosphate of Iron and ⅘ grain Phosphate of Calcium, with small quantities of the Phosphates of Potassium and Sodium. It should be kept in bottles quite full. It is not too nauseous to administer to children, for whom it is frequently prescribed, in teaspoonful doses.

One drachm doses, thrice daily, with increasing doses of Cod Liver Oil, for "recurrent" abortion.—M.A. 1904,99.

Capsules of Chemical Food are each equivalent to 1 drachm of the above syrup.

Syrupus Ferri Phosphatis cum Quinina et Strychnina. (*Off.*).

Syn. EASTON'S SYRUP (*modified*), SYRUPUS TRIUM PHOSPHATUM.—G.H.

Dose.—½ to 1 drachm (**1·8 to 3·5 Cc.**).—One drachm represents 1 grain of anhydrous ferrous phosphate, ⅘ grain Quinine Sulphate, and $\frac{1}{32}$ grain Strychnine. As this syrup becomes discoloured it is satisfactory to make only small quantities at a time.

The original formula was published in Aitken's Practice of Medicine, vol. ii. p. 62, 5th ed.

Liquor pro Syrupo Eastoni. 3 with 7 of Syrup = **Easton's Syrup** (*i.e.* 144 minims with Syrup *q.s.* to 1 ounce) (*not to be confounded with Liquor Quininæ et Strychninæ in last Edition*).

Add to a Solution of Ferrous Phosphate 5 ounces (produced by dissolving Iron Wire 150 grains in Phosphoric Acid, Sp. Gr. 1·5, 2¼ ounces and water *q.s.* to 5 ounces), one of Strychnine 10 grains, and Quinine Sulphate 260 grains, in Phosphoric Acid warmed, 2 drachms; mix, and add water *q.s.* to 12 ounces. Is better recently prepared. The Solution of Ferrous Phosphate keeps for a moderate time in stoppered bottles.

Syrupus Triplex. Understood to mean a mixture of equal parts of Easton's, Fellows's and Parrish's Syrups.

Elixir Ferri Phosphatis cum Quinina et Strychnina.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Prepare as the Syrup, using Simple Elixir in place of syrup as a vehicle.

Easton's syrup has its equivalent dose in the following pill, which is portable, tasteless, and readily soluble :—

Pilula Ferri Quininæ et Strychninæ Phosphatum. EASTON'S PILLS.

Ferrous Phosphate ...	16 grains	(1·065 Gm.)
Quinine Sulphate	16 grains	(1·065 Gm.)
Strychnine	½ grain	(0·032 Gm.)
Milk Sugar	20 grains	(1·25 Gm.)

Concentrated Phosphoric Acid *q.s.* 83.

Mix quickly, having first triturated the strychnine with he Milk Sugar, and divide into 16 pills. Also made one-half this strength. Either may be combined with Arsenious Acid, $\frac{1}{80}$ grain (about 0·001 gramme).

Tablets of Easton's Syrup are prepared each equivalent to ½ and 1 drachm of the syrup. Plain and sugar coated.

Capsules equivalent to ½ and 1 drachm of Easton's syrup are also prepared and each combined with Arsenic $\frac{1}{50}$ grain.

Pilula Trium Phosphatum, G.H. Is similar to the above with liquorice powder *vice* sugar.

Ferri Sulphas (*Off.*) and **Ferri Sulphas Granulatus** (Ferrum sulphuricum præcipitatum P.Aus.Add.), a purer form. **Ferrous Sulphate.**

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

In clear, pale, bluish green crystals, soluble 1 in ·49 of water at 62° F.—P.J. ii./03,881.

Relieves anæmia more thoroughly than carbonate or hosphate.—L. i./93,403 ; M.C. April, 1893,55.

Ferri Sulphas Exsiccatus (*Off.*). *Dose.*—½ to 3 grains (0·032 to 0·2 Gm.) 5 grains = 8 of the above.

Best administered in pill, as

Pilula Ferri Sulphatis, 3 or 5 grains, with syrup *q.s.* Dissolving slowly, these pills do not derange the stomach.

Liquor Ferri Subsulphatis, U.S. **Monsel's Solution.**

Dose.—3 to 6 minims (0·18 to 0·35 Cc.).

A solution of basic ferric sulphate. When evaporated and scaled forms **Monsel's Salt** or **Oxypersulphate of Iron.** Said to be the most astringent styptic an least irritating preparation of iron; used to chec hæmoptysis by means of an atomised spray of 20 grain to the ounce of water.

Ferri et Magnesii Sulphas.

Dose.—2 to 10 grains (0·13 to 0·65 Gm.).

A double salt containing about half its weight of eac sulphate; in sea-green crystals with chalybeate taste soluble 3 in 4 of water.

In 10-grain doses has no astringent or aperient action hence suitable for prolonged use in chlorosis and anæmi

Ferri et Manganesii Citras.

Dose.—3 to 15 grains (0·2 to 1 Gm.).

In reddish-brown scales, freely soluble in water. Ha been recommended in solution (1 in 5) for hypodermi injection where rapid absorption is required. Useful i chlorosis, combining the action of the two elements.—L. ii.96,41.

Ferro-Alumen. **Iron Alum.**—*Syn.* FERRI E AMMONII SULPHAS, AMMONIO-FERRIC ALUM U.S. *Dose.*—3 to 10 grains (0·2 to 0·65 Gm.)

Pale amethyst octahedral crystals, efflorescent o exposure to the air, odourless, having an acid, stypti taste, and slightly acid reaction; soluble 1 in 3 of water insoluble in alcohol. Is used internally to arrest hæmorrhage from the kidneys, and employed as an astringent and styptic gargle—8 grains to an ounce—also a a throat spray and pigment.

FILIX MAS (*Off.*).

The rhizome of *Aspidium Filix-mas.* The Male Fer

Acidum Filicicum. **Filicic Acid.**

Dose.—6 to 15 grains (0·4 to 1 Gm.).

A light, white, amorphous powder, tasteless and inodorous, soluble in alcohol, oils, and alkalis, insoluble i water. Is the active principle of male fern as an anthelmintic.

Extractum Filicis Liquidum (*Off.*).

Dose.—45 to 90 minims (2·7 to 5·3 Cc.).

For tapeworm should be administered fasting, in capsules, or emulsified with about half its weight of compound tragacanth powder, followed by a dose of castor oil.

Capsules contain 15 minims (0·9 Cc.) of Liquid Extract. *Dose.*—1 to 4.

Haustus Filicis Maris, L.H. Liquid Extract of Male Fern, 1 drachm; Syrup of Ginger, 1 drachm; Tincture of Quillaia, ½ drachm; Distilled Water to 1½ ounces.

Mistura Filicis, U.C.H. *Dose.*—1 ounce.

Liquid Extract of Male Fern 1 drachm, Powdered Acacia 1 drachm, Chloroform Water to 1 ounce.

Other tæniacides are **Cusso, Kousso** (*Off.*), the dried pistillate flowers of *Brayera anthelmintica*, which are administered fasting in dose of ¼ to ½ ounce infused in a cup of boiling water without straining and swallowed; **Kamala** (now discarded from B.P.), the glandular red powder attached to the capsule of *Rottlera tinctoria;* this may be given in dose of 30 to 120 grains suspended in water by means of mucilage or in honey or gruel, and **Cowhage, Dolichos Pubes**, the hairs adhering to the pod of *Dolichos* or *Mucuna pruriens*, *dose* 1 or 2 grains in treacle or honey; **Papain,** *v.p.*391; **Thymol Carbonate,** *v.p.*507, but the most efficient tæniacide is **Pelletierine Tannate,** *q.v.p.*397.

All these anthelmintics should be given at night fasting, and a brisk purgative should be taken next morning.

In obstinate cases it is frequently desirable to give a dose of castor oil *before* as well as after the worm powder.

FUCUS VESICULOSUS.

Bladder Wrack.—*Syn.* Sea Wrack.

Preparations of this sea-weed, being rich in iodine, bromine, and chlorine salts, have for a long time had the reputation of being useful in reducing corpulence.

Extractum Fuci Vesiculosi, B.P.C.

Dose.—3 to 10 grains (0·2 to 0·65 Gm.) befor meals, conveniently given in 4-grain pills, with althæ in No. 20 powder exhausted with alcohol 45 per cent and evaporated.

Extractum Fuci Vesiculosi Liquidum, B.P.C

Dose.—1 or 2 drachms (3·5 to 7 Cc.) before meals Pills, 4 grains in each, three times a day, given fo obesity.

It is recorded, a lady lost 20 lb. in 9 weeks whe taking the liquid extract; and a gentleman 8 lb. i 6 weeks; another 8 lb. in 3 weeks, without bad results

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GELATINUM (*Off.*).

Gelatina alba, P.G. iv.

Dose.—Ad libitum by the mouth, and injected *via infra.*

Tubes of Sterile Concentrated Salin Gelatin Solution are prepared for injection int the gluteal region as a hæmostatic, each one makes 2 per cent. solution on dilution with boiled water t five ounces—sufficient for one injection at 103°F.—C.D. ii/01,835.

Watson Cheyne expresses the opinion that the earl cases of infection with tetanus were more probably du to the sutures becoming infected after sterilisatio than to faulty injections.

Gelatin injections have been used to check bleedin from the lungs, from the intestines in typhoid an dysentery, from the bladder and from the stomach i ulcer and cancer of that organ. These injections ma be followed by pain, fever, local swellings and nettl rash. Other hæmostatics may be combined with it.

The tubes are a chief constituent in an emergenc case, for the treatment of internal hæmorrhage.—l ii./01,736.

A 1 or 2 per cent. solution of gelatin, or 20 grair with cerebos salt in 5 ounces of water as an injectio gave good results.—L. ii./00,772; B M.J.E. i./01.55.

Aortic aneurism relieved by subcutaneous injection solution 1 or 2 per cent.—B.M.J. ii./00,1498.

Preparation of Gelatin Injections; description apparatus to ensure a sterile product.—C. & D. ii./o 442.

A 10 per cent. solution injected was found of value n hæmophilia; averted the hæmorrhages for a proonged period.—Therapie der Gegenwart, Sept., 1902.

A case of purpura hæmorrhagica cured in three eeks by means of enemata of 6 to 10 per cent. solution. —M. 02,71. Also curative of hæmoptysis.—M.A. 904,580.

Hypodermic injections to check typhoid intestina leeding.—B.M.J.E. ii./03,72.

Two deaths from tetanus after gelatin injections for neurism.—B.M.J. ii./01,638,741.

Use in aneurism and to check hæmorrhage.—B.M.J. ./01,740; Pr.lxx.424.

Numerous cases of aneurism treated by injections of 00 Cc. of 2 per cent. solution with good results.—L. /03,1810; L. ii./03,86.

Checks hæmoptysis of phthisis.—B.M.J.E. i./02,16.

To arrest melæna of infants; 2 per cent. solution njected.—B.M.J.E. i./02,28.

Given with food for infantile diarrhœa.—B.M.J.E. ./03,59.

GELSEMII RADIX (*Off.*).

yn. GELSEMINUM.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

The dried rhizome and roots of "yellow jasmine" —*Gelsemium nitidum* (*G. sempervirens*, Aiton)—imorted from the United States, must be distinguished om the yellow jasmine cultivated here, which is a ecies of *Jasminum*. Gelsemium is said to have febriuge properties, as it lowers the pulse and depresses the rvous system. It has been much used in acute and eumatic neuralgia, and toothache. It is a powerful aralyzer, as well as tetanizer, and respiratory poison. arge doses contract the pupil and cause giddiness and iplopia.

The plant contains two alkaloids designated elseminine and gelsemine, the former being highly oxic, the latter of little importance. Much confusion as arisen between these two bodies.

Antidotes.—Emetics, Atropine or Strychnine ypodermically, repeated, and Nitroglycerin; or Amyl itrite.

A standard of 0·5 per cent. total alkaloids for the root, and 0·05 per cent. for the tincture is suggested.—P.J. i./04.

Gelseminina, (Alkaloid). (Merck.)
Dose.—$\frac{1}{100}$ to $\frac{1}{32}$ grain (0·00065 to 0·002 Gm.).
Yellowish-white minute crystals, with a bitterish taste, odourless, sparingly soluble in water, easily soluble in alcohol, ether, and dilute acids. This forms crystalline salts, and has mydriatic properties.

Gelsemininæ Hydrochloridum, (Merck.)
Dose.—$\frac{1}{60}$ to $\frac{1}{20}$ grain (0·0011 to 0·0032 Gm.) —See above.
In white, granular crystals, freely soluble in water.

Ophthalmic discs contain $\frac{1}{500}$ grain Gelseminine combined with gelatin.

Gelsemin. *Dose.*—$\frac{1}{2}$ to 2 grains (0·032 to 0·13 Gm.) in a pill, with spirit and glycerin.

The powdered alcoholic extractive of a pale brown colour obtained from Gelsemium root. Useful in neuralgia and as an hypnotic. *Must be distinguished from the alkaloids.*

Case of severe toxic symptoms following $\frac{1}{10}$ grain gelseminine hydrochloride, given instead of gelsemin. B.M.J. i./89, 355.

Extractum Gelsemii Alcoholicum, B.P. 1885.
The powdered drug was percolated with rectified spirit, displaced with water, and the tincture evaporated to an extract. Was intended as the official equivalent of Gelsemin (see above).
Dose.—$\frac{1}{2}$ to 2 grains (0·032 to 0·13 Gm.).

Extractum Gelsemii Liquidum, U.S. Is made with 90 per cent. Alcohol, strength 1 = 1.
Dose.—5 to 10 minims.

Tinctura Gelsemii (*Off.*).
Gelsemium in No. 40 powder 2, Alcohol (60 per cent.), *q.s.* to 10. Percolate.

Dose.—5 to 15 minims (0·3 to 0·9 Cc.), often combined with bromide of ammonium or potassium for neuralgia. The tincture has a pale brown colour and a fluorescent surface.

For neuralgia of face and jaws associated with carious eeth—15 minims of the tincture every 6 hours rarely ails to give relief.

Case of traumatic tetanus treated by Gelsemium with ecovery.—B.M.J. ii./82,1245; B.M.J. i./83,9.

Disordered vision may follow even moderate doses.— 3.M.J. i./01,640.

GINGERIN.

Dose.—¼ to 1 grain (0·016 to 0·065 Gm.), in a pill r much diluted with spirit.

In commerce this is the crude liquid oleo-resin obtained rom ginger, the rhizome of *Zingiber officinale.* It has he colour and consistence of treacle, with an aromatic nd very pungent taste. Is a useful addition to purgave pills as a corrective to prevent them griping.

inctura Carminativa, B.P.C.

Cardamom Seeds, bruised, 600 grains, Essence of Ginger ¼ ounces (B.P. 1885), Oil of Cinnamon 100 minims, il of Caraway 100 minims, Oil of Clove 100 minims. Iacerate the Cardamoms in 15 ounces of Alcohol (90 per nt.) for a week, decant, express, and dissolve the oils in ne mixed tinctures, adding Alcohol (90 per cent.) *q.s.* to ne pint. *Dose.*—2 to 10 minims (0·12 to 0·6 Cc.).

inctura Zingiberis Fortior, Essence of Ginger, B.P.C., Ginger 1, in Alcohol (90 per cent.) 2. *Dose.*—5 to 20 minims.

inctura Cinnamomi Composita P.L.

Dose—20 to 40 minims (1·2 to 2·4 Cc.).

Cinnamon Bark 16, Cardamom Seeds 8, Long Pepper Ginger 5, Alcohol 60 per cent. 640. Macerate seven ays.

GLUCOSE.

Syn. DEXTROSE, GRAPE SUGAR.

Glucose is prepared by acting upon Starch with Dilute ydrochloric Acid, it is found either in white lumps as a thick, sticky mass.

Glucose Tubes are prepared for artificial feeding a preliminary to severe operations, for the resultant ock, and for wasting diseases. The use of this ccharine injection is, beyond doubt, of great value, d ought to be more widely known and practised. ne glass tubes can be carried about for every serious eration. The contents of a tube are diluted to a pint with boiled water to make a 5 per cent. solution (which strength is isatonic with the blood) and as much as a litre of this solution may be injected, and has never been found to cause any evidence of sugar in the urine. An ordinary aspirator needle about 1 mm. in transverse section of its lumen, attached to 3 feet of rubber tubing with a suitable glass reservoir above are all the apparatus required; this is carefully sterilised by boiling and is filled with the sterilised injection. The needle is introduced under the skin of the arm, near the axilla—the skin having been previously carefully cleansed—the douche is then raised 2 feet or so and the transfusion proceeds easily. The effect of the treatment has been uniformly good as regards pulse, general strength and relief of thirst.—A. E. Barker, B.M.J. i./02,770.

Glucose is said to be employed in the sophistication of honey, with the result that Oxymel Scillæ (*Off.*) varies in colour and density.—P.J.ii./03,778,871.

For method of estimation in Urine see p.602 *et seq.*

GLYCERINUM (*Off.*).

Dose.—1 to 2 drachms (3·5 to 7 Cc.).

For official preparations, see index.

Stronger solutions of carbolic and tannic acids are sometimes preferred to the official glycerins of these acids. As a throat pigment, and for uterine application, that of tannic acid may be used double the official strength—1 to 2 of Glycerin—Pigmentum Acidi Tannici. Glycerin of borax is not a mere solution; it has an acid reaction, and when mixed with an alkaline carbonate evolves carbonic acid; it is useful in infantile diarrhœa, in doses of 20 minims, repeated according to age.

Glycerin of Starch improved by addition of tragacanth 1 to 400 parts.—P.J.i./97,201.

Glycerinum Aluminis (*v.p.*74) is a useful astringent in chronic pharyngitis; is less disagreeable than tannin.

Half an ounce of Glycerin alone, or with one-third part of water added, forms a useful enema for constipation. **Suppositories** (*v.p.* 276).

Two drachms injected into the rectum lessens the size of piles: also useful in infantile diarrhœa.

Intra-uterine injection of an ounce of 3 per cent. solution of formalin in glycerin recommended in cases of septic infection after childbirth.—L. ii./03,1229.

In nephrolithiasis, doses of from 1 to 4 ounces gave good results.—P.J. i./00,221.

Glycerin Jelly, for toilet use.

Gelatin 140 grains, Rose Water 6 ounces; soak a few minutes, and heat in a water-bath to dissolve; add, when cool but still fluid, White of Egg ¾ ounce. Heat to coagulate completely, and add Glycerin 6 ounces, Salicylic Acid 12 grains. Mix well, filter through a hot-water funnel, and bottle while warm.

Lubricant Glycerin Jelly is supplied in 'Collapsubes' more particularly for the lubrication of Stomach Tubes.

Microscopic Glycerin Jelly is somewhat harder and is specially prepared for mounting purposes.

Glycerinum Aluminis et Acidi Tannici.

Potassium Alum (free from iron), in powder, 1, Glycerin 6. Heat to dissolve, and add Tannic Acid 1.

This forms a solution which is a very astringent throat pigment; has the advantages of a gargle without destroying the appetite. An ounce to a pint of tepid water forms a useful astringent vaginal injection.

Glycerinum Bismuthi Nitratis.

Bismuth Nitrate, in crystals 1 (true nitrate), Glycerin 8. Dissolve without heat. Used as stimulant application in eczema.

Glycerinum cum Aqua Rosæ.

Glycerin 2, Rose Water, prepared with Otto, 3. Mix. An agreeable emollient for the skin.

Glycerinum Hydrargyri Perchloridi contains ⅛ grain in 1 minim, *v.p.*290.

Glycerinum Plumbi Subacetatis (*Off.*).

This is of the same strength as Goulard's Extract—Liquor Plumbi Subacetatis Fortis (*Off.*), with glycerin for the solvent in place of water; it keeps much better than and does not deposit like the latter.

Useful in chronic eczema. It should first be applied diluted 1 part with about 7 of glycerin, and the strength gradually increased; it desiccates the eruption without producing a hard crust. It may also be diluted with four parts of milk as a lotion for eczema.

Lotio Plumbi cum Lacte is generally made with liquor plumbi subacetatis, 1 or 2 drachms to the ounce of milk, with a little Eau de Cologne added. For nettle rash and any skin irritation.

Liquor (or Lotio) Plumbi Lactatis has 1 part of Solution of Lead Subacetate to 15 of Milk, but it is more frequently used about 1 to 9. (Mid. H. adds Salicylic Acid 1 grain to each ounce).

The glycerole has also been found useful, in some uterine affections, applied on absorbent wool, diluted as above.

Unguentum Glycerini Plumbi Subacetatis: Lead Subacetate Ointment (*Off.*).

Glycerin of Lead Subacetate, by weight, 1, Paraffin Ointment, white, 5. Mix.

Useful in chronic eczema, ulcerated legs, and in tinea tarsi.

Unguentum Zinci Compositum, R.O.H., Ointment of Zinc, Ointment of Glycerin of Lead Subacetate, of each equal parts. Rub well together.

Glyceritum Vitelli, U.S. **Glyconin.**

Rub Yolk of Egg, 45, with Glycerin (by weight) 55, gradually added until thoroughly mixed. Used for emulsifying oils and applied to burns, fissures, and cracked nipples.

Glycero-alcohol.

Dose.—5 to 60 minims (0·3 to 3·5 Cc.).

Glycerin 333, Distilled Water 146, Alcohol, 95 per cent., 580. In Paris is recommended as a solvent of alkaloids and active principles, as it keeps indefinitely and does not evaporate. It has Sp. Gr. about 1.

Glyco-gelatin, T.H.

Refined Gelatin 1 ounce, Glycerin (by weight) 2½ ounces, Ammoniacal Solution of Carmine *q.s.*, Orange Flower Water 2½ ounces. Soak the gelatin in the water for two hours, then heat in a water-bath till dissolved, add the glycerin, and stir well together. Let the mixture cool, and when nearly cold add the carmine solution, mix till uniformly coloured, and set aside to solidify.

Glyco-gelatin affords a ready method of prescribing lozenges to meet the requirements of individual cases ne ounce of the mass will make twenty-four pastils; it medicated by melting in a water-bath, and the medica-ent added; or this, if insoluble, is first rubbed with a ttle glycerin, and then mixed with the hot basis, and oled by pouring into an oiled tray, and, when solidified, t into the required number of pastils. Pastils are ecially suited to cases of inflammation of the tongue r palate, and their gelatinous nature gives much lief in dryness of the throat. The following list may e kept prepared:—

astillus	Acidi Borici	gr.2
„	Acidi Carbolici	gr.$\frac{1}{2}$
„	Aconiti Tinct.	m.i.
„	Ammonii Bromidum	gr.1
„	Ammonii Chloridi, T.H.	gr.2
„	{ Apomorphinæ { Codeinæ	gr.$\frac{1}{32}$ } gr.$\frac{1}{10}$ }
„	Bismuthi Carbonatis, T.H.	gr. 3
„	{ Bismuthi Carbonatis, T.H. { Morphinæ Acetatis	gr.3 } gr.$\frac{1}{40}$ }
„	Cascara Sagrada	gr.$2\frac{1}{2}$
„	Cocæ Extracti	gr.$2\frac{1}{2}$
„	Cocainæ Hydrochloridi gr. $\frac{1}{6}$, $\frac{1}{8}$, $\frac{1}{10}$, $\frac{1}{12}$, $\frac{1}{20}$ (T.H. has $\frac{1}{10}$.)	
„	Cocainæ gr.$\frac{1}{15}$ et Morphinæ	gr.$\frac{1}{30}$
„	Codeinæ	gr. $\frac{1}{8}$
„	Eucainæ *β*.	gr.$\frac{1}{10}$
„	Eucalypti Olei	m. $\frac{1}{2}$
„	{ Eucalypti Olei { Cocainæ Hydrochloridi	m. $\frac{1}{2}$ } gr.$\frac{1}{20}$ }
„	Heroin	gr.$\frac{1}{24}$
„	Iodoformi, (more or less if prescribed, *v.p.*313).	gr. 1
„	Menthol, T.H. (St.Th.H. gr.$\frac{1}{4}$.*v.p.*349)	gr. $\frac{1}{6}$
„	{ Menthol { Cocainæ Hydrochloridi	gr.$\frac{1}{20}$ } gr.$\frac{1}{20}$ }
„	{ Menthol { Codeinæ	gr.$\frac{1}{20}$ } gr.$\frac{1}{10}$ }
„	{ Menthol { Eucalypti Olei	gr.$\frac{1}{20}$ } m. $\frac{1}{2}$ }
„	Morphinæ Acetatis	gr.$\frac{1}{30}$
„	{ Pini Pumilionis Olei { Terpeni Hydratis { Heroin Hydrochloridi	m. $\frac{1}{2}$ } gr. $\frac{1}{8}$ } gr.$\frac{1}{48}$ }

Pastillus Sodii Biboratis	gr. 3
,, { Sulphuris Precipitati	gr. 5 }
,, { Potassii Tartratis Acidi	gr. 1 }
,, Terebeni	m. 2
,, Thymol	gr. $\frac{1}{32}$
,, Tussis = Cocaini gr. $\frac{1}{15}$ et Morphinæ gr. $\frac{1}{30}$.	

The **Pastils** or **Jujubes** commonly sold of oval or round shape (the latter are frequently sugared) will be found in the index under Trochisci marked G. (*i.e.* of Gelatin).

Suppositoria Glycerini, **Glycerin Suppositories** (*Off.*). Soak Gelatin, ½ ounce, in Distilled Water, *q.s.* for a minute, and pour away the excess; then add Glycerin, by weight, 2½ ounces dissolve in a water-bath and evaporate to 1,560 grains. Pour into moulds of 15, 30, 60, or 120 grain-measures, or other capacities as required. Contain 70 per cent. by weight of Glycerin. This basis may be used for gelatin **pessaries.**

Suppositoria cum Glycerino. Arzn. **Glycerin with Soap Suppositories.**

Sodium Carbonate 15, Glycerin 470; heat to dissolve; add Stearic Acid 25. Continue heat with agitation until combined and frothing ceases. Pour into moulds. Wrap the suppositories in tinfoil and keep in bottles.

Suppositoria Glycerini, P.Aus.Add.

Are similar with two-thirds the quantity of Glycerin, used in last formula, and weigh 2 and 3 grammes.

Hollow Suppositories, composed of Oil of Theobroma. May be filled with 20, 45, or 90 grains of Glycerin; they are more prompt in action than either of the above.

Hollow Suppositories and Pessaries may also be filled with **Bismuth** and **Cocaine Ointment, Gall** and **Opium Ointment, Liquid Extract** of **Hamamelis, Hamamelis Ointment, Suprarenal Extract, Adrenalin Solution.**

Antiphlogistine is a pasty antiseptic dressing said to extract fluid from the tissues, and to have anodyne effects. It is said to be composed of glycerin, boric and salicylic acids, ferrous carbonate, peppermint gaultheria, eucalyptus and iodine, combined with an earthy basis.

Thermofuge is said to be a mixture of Aluminium

Silicate, Glycerin, Boric Acid, Menthol, Thymol, Eucalyptus Oil, and Ammonium Iodide. It is used as a substitute for poultices to reduce heat, redness and swelling.

GLYCYRRHIZA (*Off.*).

Dose.—5 to 20 grains (0·32 to 1·3 Gm.) or more.

The peeled root and subterranean stem of *Glycyrrhiza glabra.*

Extractum Glycyrrhizæ (*Off.*).

Dose.—5 to 60 grains (0·32 to 4 Gm.).

Extractum Glycyrrhizæ Liquidum (*Off.*).

By cold exhaustion 1 = 1, contains ⅕ of its volume of 90 per cent. alcohol. *Dose.*—½ to 1 drachm (1·8 to 3·5 Cc.).

Extractum Glycyrrhizæ Spirituosum, I.C. Add. *Dose.*—½ to 1 drachm.

Extract of Liquorice 2, Alcohol (90 per cent.) 1, Water *q.s.* to 4. Keeps better than last preparation.

Glycyrrhizinum Ammoniatum, U.S.

Dose.—½ to 5 grains (0·032 to 0·32 Gm.).

Glycyrrhizin, the sweet principle of liquorice, is precipitated, from solution in water, by acids. It is contained in the root as an ammoniacal compound; it forms garnet-coloured, shining scales when precipitated, purified, recombined with ammonia, and dried on glass plates; these possess the persistent sweet taste of liquorice. A grain will flavour 6 ounces of water.

The before-mentioned preparations of liquorice are useful for covering the taste of nauseous drugs given in a liquid form, such as ammonium chloride, magnesium sulphate, quinine sulphate, ipecacuanha, and aloes. In tincture of aloes, liquorice effectually disguises the bitter taste; it is also added, for the same purpose, to Mistura Sennæ Composita, Decoctum Aloes Compositum, Confectio Sennæ, and as a demulcent was used in Infusum Lini, B.P. 1885.

In addition to the official extracts, dried extracts are largely imported from Italy and Spain, known as Liquorice Juice or Spanish Liquorice, that bearing the stamp of Solazzi being most prized. There are also prepared in England, Liquorice Lozenges, known as Pontefract Cakes, and the same substance in sticks about the thickness of a quill known as Pipe Liquorice. The are demulcent and useful in allaying tickling coughs.

Trochisci Glycyrrhizæ, Brompton Hospital and City Road Chest Hospital, commonly know as 'Brompton' Cough Lozenges, or 'Brompton Blacks.

Liquorice Extract 3 grains, Anise Oil ½ minim i each, with Acacia basis.

Pulvis Glycyrrhizæ Compositus (*Off.*).

Syn. PULVIS LIQUIRITIÆ COMPOSITUS, P.G PULVIS PECTORALIS (*Kurellæ*).

Senna and Liquorice of each 2 (1½ P.G. iv.), Fennel 1 Sublimed Sulphur 1, White Sugar 6 (5 P.G. iv). Mi

Dose.—1 to 2 drachms (3·5 to 7 Gm.), mixed wit water or milk, taken early in the morning, is a mil and agreeable laxative. For constipation and hepati disease, it is pleasant to take, and effectual withou catharsis. U.S. uses oil of fennel, which makes tl preparation less granular.

GOSSYPIUM (*Off.*).—*Syn.* Cotton Wool.

This is absorbent and is much employed as a wounc dressing. It is prepared by alternately treatin bleached cotton with diluted hydrochloric acid an solution of soda and well washing afterwards. Go sypium is soluble in an ammoniacal solution of copp oxide.

For the surgical forms of Cotton Wool Dressing see p.627 *et seq.*

Extractum Gossypii Radicis Corticis.—semi-alcoholic preparation. *Dose.*—1 to 4 grai (0·065 to 0·26 Gm.), in pill.

Pilula Gossypii Composita.

Extract of Cotton Root, Extract of Hydrasti Ergotin, of each 1 grain (or 1 gramme divided into 1 pills). *Dose.*—One, three or four times a day. Usef for congestive dysmenorrhœa.

Extractum Gossypii Radicis Cortici Liquidum, I.C. Add., *v.p.*xx.

Dose.—½ to 1 drachm.

The bark exhausted with a mixture of Glycerin Alcohol (90 per cent.) 3; 1=1.

Tinctura Gossypii Radicis.

Dried bark of root of cotton plant 1, alcohol 60 per cent. 4.

Dose.—1 drachm (3·5 Cc.) 3 times a day as an emmenagogue and parturient.

An infusion has been used in place of ergot in labour, and preparations of the root possess hæmostatic power.

GRINDELIA.

Gum Plant.

The dried herbs *Grindelia robusta* and *G. squarrosa*—the latter is most commonly used. The involucre, and often the leaves, are coated with a glutinous oleo-resin. In America, this drug has been found very useful in reducing the frequency and violence of the spasmodic attacks which occur in asthma, whooping-cough, and bronchitis, and is given in heart disease to slow and regulate the pulse.

Extractum Grindeliæ (Alcoholic).

Dose.—2 to 3 grains (0·13 to 0·2 Gm.) in a pill with lycopodium, three times a day.—R.

Extractum Grindeliæ Liquidum, I.C. Add.

Exhaust herb with alcohol (90 per cent.), distil, add Sodium Bicarbonate to residue and water *q.s.* with alcohol (90 per cent.) one-fourth to make 1=1.

Dose.—10 to 20 minims (0·6 to 1·8 Cc.) at the onset of a paroxysm of asthma, repeated every half-hour or hour, in sweetened water or milk, else the resin separates and sticks to the vessel. Useful for whooping-cough. —L.i./90,565.

Mistura Grindeliæ, G.H.

Liquid Extract of Grindelia 30 minims, Liquid Extract of Liquorice 1 drachm, Spirit of Chloroform 5 minims, Mucilage Mixture (*v.p.*86) to 1 ounce.

Tinctura Grindeliæ.

Dose.—1 to 2 drachms (3·5 to 7 Cc.). 1 in 8 of 90 per cent. alcohol by maceration. A resinous tincture which requires a suspending agent.

GUAIACI RESINA (*Off.*).

The resin obtained from *Guaiacum Officinale* or *Guaiacum Sanctum*.

Dose.—5 to 15 grains (0·32 to 1·0 Gm.).

This resin is found of great value in chronic rheumatism and lumbago, and for chronic sore throats added to purgatives is found useful in gouty persons, and for sluggish liver. Is said to decrease the amount of sugar in urine in diabetics.

Chelsea Pensioner, *v.p.*498.

Tablets Guaiacum Resin and Sulphur 3 grains of each (0·2 Gm. of each).

Capsules of Guaiacum Resin contain 5 grains each (0·3 Gm.).

GUARANA.

Dose.—10 to 60 grains (0·65 to 4 Gm.) in powder, or infused in a cup of boiling water.

The seeds of *Paullinia Cupana* (*P. sorbilis*), roasted and moistened with water, made into a hard paste, rolled into cylinders, and dried. Imported from Brazil. The drug contains about 5 per cent. of a crystalline alkaloid **Guaranine,** which is identical with caffeine, together with tannin, gum, &c. Guarana has been particularly recommended for sick-headache. *Dose.*—½ to 5 grains (0·032 to 0·32 Gm.), or more.

Elixir Guaranæ, B.P.C.

Guarana, in No. 60 powder, 4 ounces, Light Magnesia ½ ounce, Oil of Cinnamon 6 minims, Syrup 2 ounces, Alcohol 60 per cent., a sufficient quantity.

Mix intimately the powders, and moisten them with three ounces of alcohol 60 per cent. After twenty-four hours' maceration, mix with eight ounces of coarse sand, and pack in a percolator; pass through proof spirit until sixteen ounces are obtained, then transfer the mass to a press-bag and apply pressure. To the percolate add the syrup and oil of cinnamon, and make up to one pint by addition of the expressed liquid, previously reduced by evaporation if necessary.

Dose.—½ to 2 drachms (1·8 to 7 Cc.).

Tinctura Guaranæ.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Macerate Guarana 1 ounce, in Alcohol 60 per cent., *q.s.* to produce 4 ounces.

Guarana is said to contain double as much caffeine as tea, and five times as much as coffee; it is a nervine tonic.

For sick-headache, 30 to 60 grains is a certain remedy. Useful also in diarrhœa and dysentery.—Pr lv. 60; Th. Gaz. 1890,287.

HÆMATOXYLI LIGNUM.
Logwood (*Off.*).

The unfermented heart-wood of *Hæmatoxylon campechianum.* Possessing a sweetish astringent taste. The fermented chips used by dyers are deep red in colour, have lost the sweet taste, and the hæmatoxylin is oxidised to **Hæmatein.**

Decoctum Hæmatoxyli (*Off.*).

Dose.—½ to 2 ounces (15 to 60 Cc.).

Logwood in chips 50, Cinnamon Bark 8, Water 1,000 Boil 10 minutes.

A valuable remedy for diarrhœa and some forms of urinary hæmorrhage.

Extractum Hæmatoxyli Liquidum, B.P.C.

Unfermented logwood, in No. 16 powder	20	ounces.
Alcohol (90 per cent.)	3	ounces.
Distilled water	6	pints.

Boil the logwood with the water in three successive portions for half-an-hour each; mix the liquors, strain, and evaporate to 17 ounces; add the achohol. Set aside or 7 days and decant from any sediment.

Dose.—½ to 2 drachms (1·8 to 7 Cc.). Contains the hæmatoxylin and all the natural astringent properties of he wood unchanged.

Hæmatoxylin. Usually met with in yellowish granular crystals, slowly and sparingly soluble in water, easily soluble in alcohol. Is much used for staining histological specimens, *v.p.*601.

HAMAMELIDIS CORTEX ET FOLIA.
Witch Hazel Bark and Leaves (*Off.*).

The bark and leaves, fresh and dried, of *Hamamelis irginiana*, Witch Hazel, imported from the United tates of America, possess powerful astringent properties, nd are used for checking hæmorrhages and excessive mucous discharges. They form the basis of the American specialties—Pond's Extract (*dose*, 10 drops half-hourly), and Hazeline (*dose*, $\frac{1}{2}$ to 3 drachms).

Liquor Hamamelidis (*Off.*). B.P. gives no dose.

Fresh Leaves 5, Water 10, Alcohol (90 per cent.) 1. Macerate 24 hours and distil one-half.

Dose.—$\frac{1}{2}$ to 3 drachms (1·8 to 10·5 Cc.), and used externally for piles, and by rectal injection for internal piles.

Liquid preparations useful for hæmorrhoids, applied on sheep's wool.—B.M.J.i./92,542; L.i./92,583; Pr. xlviii. 378.

Possesses an aromatic odour (*not* due to formaldehyde) possibly due to a body resembling methyl-protocatechuic-aldehyde (vanillin).—Attfield's "Digest."

Extractum Hamamelidis Liquidum (*Off.*).

Hamamelis Leaves, in No. 40 powder, are percolated with 45 per cent. alcohol. The first portion of percolate is set aside, and the other after concentration is mixed with it, so that 1 = 1 of leaves. *Dose.*—5 to 15 minims (0·3 to 0·9 Cc.).

Hamamelin.—*Syn.* **Hamamelidin.**

Dose.—$\frac{1}{2}$ to 2 grains (0·032 to 0·13 Gm.) in pill. It is the powdered extractive from the above of a purplish-brown colour. A suppository of 1 to 3 grains with cacao butter is useful for piles.

Tinctura Hamamelidis (*Off.*).

Bark, in No. 20 powder 1, Alcohol (45 per cent.) *q.s.* to 10.

Dose.—30 to 60 minims (1·8 to 3·5 Cc.).

A valuable hæmostatic, very serviceable in hæmoptysis, hæmorrhoids, menorrhagia, in fact in all passive hæmorrhage, and what is known as the hæmorrhagic diathesis. As an injection for bleeding piles, 1 drachm of the tincture in 3 ounces of cold water should be given as an enema, and retained, at bedtime or before breakfast, every day; or the following ointment applied locally.—R.

A lotion of 1 or 2 drachms with water to an ounce, is a useful application to bruises and small wounds.

Unguentum Hamamelidis (*Off.*).

Liquid Extract of Hamamelis 1, Hydrous Wool Fat 9; a better preparation is made with Soft Paraffin and Hydrous Wool Fat 2, or with a mixture of Hydrous Wool Fat 2 and Anhydrous 1. Used as an ointment for piles.

'**Collapsubes**' (*v.p.*217) are prepared with rectal tube for the treatment of piles, *vide* also **Hollow Suppositories** (*p*.276).

Also '**Collapsubes**' of **Hamamelis Ointment with Cocaine** 2 per cent.

Menorrhagia is controlled by 1 drachm of hazeline three times a day.—Pr. xxiii.141.

Witch Hazel **plasters** are also made in rubber combination for covering varicose veins.

HYDRARGYRUM (*Off.*).

Antidotes to Mercurial Salts.

Emetics by mouth, Apomorphine hypodermically; white of 1 egg for every 4 grains of Perchloride, (avoid excess) or milk; alcohol or ether; and opium.

Injectio Hydrargyri Hypodermica. — *Syn.* **Grey Oil.** [Use unsatisfactory, has caused cellulitis.] Mercury 39, Mercurial Ointment 2, Vaseline Oil 59.

Dose.—1 to 2 grains daily for syphilis; B.M.J.E. ii./98,108.

Hyrgol, Hydrargyrum Colloidale.—A specialty A water-soluble Mercury compound containing between 73 and 80% of Mercury. A 10% ointment recommended for inunction; it is of value for epididymitis.

Lanolinum Hydrargyri, *v.p.*337.

Linimentum Hydrargyri (*Off.*).

Strong Solution of Ammonia 10, Camphor Liniment *q.s.* to 45. Mercury Ointment 30, Camphor Liniment *q.s.* to 45 (fluid). Mix the two liquids.

Mercuric Ethylene-diamine Sulphate. *Syn.* SUBLAMINE.

Contains 43 per cent. of Mercury. Soluble in 1·6 of water and about 1 in 200 of Alcohol, 90 per cent. A non-irritant sublimate substitute, is used in solutions of 1 to 1,000; *i.e.*, one tablet (*vide* below) to a quart of water. This strength is recommended for hand disinfection; the same or half this strength is suitable for vaginal irrigation, and it has been suggested for injection subcutaneously, and into the muscles in syphilis. —P.J.ii./02,273.

Tablets of Sublamine. Red in colour, 15 grains each. *Very poisonous.*

Mercury is contained in the following preparations in proportion as follows:—

Calomel 84·92 per cent., Cyanide 79·32, Perchloride 73·80, Green Iodide 61·16, Red Iodide 44·05, and Benzoate 45·25.—Pr. lxx. 571.

Mercuriol.—*Syn.* MERCURAMALGAM.

An amalgam of aluminium, magnesium and mercury, the latter to the extent of 40 per cent. It is an amorphous powder from which the mercury volatilises under influence of warmth, air and moisture. For syphilitic affections, carried as sachet.—P.J. i./00,2; B.M.J. i./00,579.

Mercurol, *v.p.*157.

A combination of mercury with nuclein. Used for gonorrhœal injections, ½ to 2 per cent. solutions. —L. i./00,1450; P.J. i./00,95. Use in urethritis.— L. ii./00,871. Antiseptic use in the diseases of the nose and ear.—L. ii./00,1726.

Unguentum Hydrargyri (*Off.*).

Mercury 16, Lard 16, Suet 1, Mix *s.a.* Principally used for mercurial inunction in syphilis.

Should be 30 per cent. C.U.D.

Unguentum Hydrargyri Compositum (*Off.*).

Mercury Ointment 10, Yellow Beeswax 6, Olive Oil 6, Camphor Flowers 3. *Scott's Dressing, modified.*

Unguentum Hydrargyri Mitius, B.P.C.; P.L. 1836, Blue Unction. Mercurial Ointment 1, Lard 2, Mix. Used for destroying *Pediculus pubis.*

Hydrargyri Benzoas. Mercuric Benzoate.

A white crystalline powder, practically insoluble in cold water; soluble about 1 in 180 of Alcohol 90 per cent.

Hydrargyri Carbolas, Mercury Carbolate. Phenol Mercury. *Dose.*—½ to 2 grains (0·032 to 0·13 Gm.) daily. A whitish amorphous powder obtained by double decomposition of mercuric chloride and an alcoholic solution of phenol in caustic potash. In pills, ⅓ grain each. *Dose.*—2 to 6 daily.

Iydrargyri Cyanidum,

Dose.—$\frac{1}{20}$ to $\frac{1}{4}$ grain (0·0032 to 0·016 Gm.).

Is in anhydrous, white or colourless, prismatic rystals, soluble 1 in 8 of water. It is not decomposed y alkalis; is poisonous, and has a nauseous metallic aste. It is used as a lotion to syphilitic sores, and iven in pills of $\frac{1}{10}$ or $\frac{1}{12}$ grain twice daily. Used in iphtheria, $\frac{1}{250}$ grain frequently, with 1 minim Tincture f Aconite, in honey, using also a gargle, 1 in 10,000.

Intravenous injections of 1 per cent. solutions of nercuric cyanide recommended in syphilis.—B.M.J. i./96,1702; L. i./99,432.

Mercuro-Zinc Cyanide. A white powder obtained y precipitation from a cold saturated solution of the yanide of mercury and potassium by adding a cold aturated solution of zinc sulphate in equi-molecular roportions, or by adding in similar solutions mercuric hloride to zinc and potassium cyanide. In this powder ne two cyanides are combined in the proportion of molecules of zinc cyanide and 1 of mercuric cyanide; f the latter it should contain 40 per cent.

Is recommended by Lord Lister tinted with rosaniline, s an unirritating antiseptic, and to impregnate gauze, lso to form ointments for eczema and other skin ffections, in place of oxide of zinc.

Cream of Mercuro-Zinc Cyanide may be made y triturating the powder with carbolic lotion, 1 in 20, .s., for applying to hairy parts adjacent to wounds.

Mercuro-Zinc Cyanide Paste. Mercuro-Zinc Cyanide 400, Tragacanth 2, Phenol 20, Water 800. Mix, for a first field-dressing for wounds in war.

Collapsible tubes of the **Cyanide Paste** soldered both ends and flat in shape are supplied for oldiers' use. The ends are easily torn off.

To insure a thin surface which will immediately dry, he paste must be rubbed on in as thin a layer as ossible.

Unguentum Hydrargyri et Zinci Cyanidi, R.O.H. 1 or 2 in 100 of Soft Paraffin or Lanoline.

'Collapsubes' these strengths and ¼ and ½ per ent. are prepared.

Iydrargyri Gallas. **Mercurous Gallate.**

Dose.—$\frac{1}{2}$ to 1 grain (0·032 to 0·065 Gm.) in pill, with extract of gentian, 3 or 4 times daily.

A dark green insoluble amorphous powder, useful in syphilis, as its absorption is rapid without purging.

Hydrargyri Iodidum Rubrum, Mercuric Iodide (*Off.*). **Mercury Biniodide.**

Dose.—$\frac{1}{32}$ to $\frac{1}{16}$ grain (0·002 to 0·004 Gm.).

Pills contain $\frac{1}{50}$, $\frac{1}{36}$, $\frac{1}{24}$, $\frac{1}{16}$, $\frac{1}{12}$, and $\frac{1}{8}$ grain.

Tablets contain $\frac{1}{20}$ grain (0·0032 Gm.).

Soluble in solutions of other iodides, forming double salts; also 1 in 25 of castor oil; or 100 parts of the latter will dissolve 8 of this iodide with 5 of perchloride of mercury. Is a powerful antiseptic.

Biniodide Spirit Lotion 1 in 1000 is employed.

In solution with sodium chloride is valuable as an injection for gonorrhœa, and as a pigment for throat in scarlatina and diphtheria, also as spray.—B.M.J. ii./91,834.

An unstable **Yellow Mercuric Iodide** also exists which easily reverts to the red condition.

Injectio Hydrargyri Iodidi Rubri Hypodermica.—(Ragazzoni). *Dose.*—2 to 6 minims.

Mercuric Iodide 1 grain, Sodium Iodide *q.s.*, in 64 minims.

Hydriodol, **Mercuric Iodide Oil** —*Syn.* **Cypridol.**

Dose.—3 to 6 minims.

Contains 1% of the Iodide in sterilised oil, for hypodermic injection by syringe with screw piston.

Hydriodol Capsules contain of the Oil = $\frac{1}{32}$ and $\frac{1}{16}$ grain of Mercuric Iodide, and given *per os* are slowly absorbed by the biliary and pancreatic secretions, the Oil does not prove irritating to the digestive organs.

'**Collapsubes**' (*v.p.*217) of Mercuric Iodide Ointment 1 per cent. with catheter attachment, are useful for the treatment of gonorrhœa.

Pilula Arsenii et Hydrargyri Iodidi.

Dose.—1 or 2, two or three times a day.

Arsenious Iodide, Mercuric Iodide, of each 1 grain, Distilled Water *q s.* to dissolve, Sugar *q.s.* to make 12 two-grain pills (or 1 Gm. of each Iodide in 180 pills). May be combined with 2 grains of Iodide of Iron pill.

Hydrargyri et Potassii Iodidum.

Dose.—$\frac{1}{16}$ to $\frac{1}{4}$ grain (0·004 to 0·016 Gm.), in pill.

In yellow crystalline prisms; has been administered for syphilis. Is formed in solution when the perchloride is given in excess of solution of potassium iodide. The crystals are decomposed by water, depositing half the mercuric iodide.

Mistura Hydrargyri Biniodidi, K.C.H.

Dose.—1 ounce (30 Cc.).

Solution of Mercuric Chloride 30 minims, Potassium Iodide 10 grains, Ammonium Carbonate 5 grains, Decoction of Cinchona to one ounce.

U.C.H. has Solution of Mercuric Chloride 60 minims, Potassium Iodide 4 grains, Water to one ounce.

Mayer's Reagent.

Mercuric Chloride 13·546 grammes, Potassium Iodide 49·8 grammes, Distilled Water to 1 litre.

This reagent gives a precipitate with alkaloids.

Pilula Hydrargyri Iodidi Rubri (⅛ gr.) et Potassii Iodidi (4 gr.).

Dose.—1, two or three times a day.

Soaps containing respectively 3, 1 and ½ per cent. of Mercuric Iodide are prepared. Useful for eczema, cne, scabies, ringworm, and desquamation after fevers.

Unguentum Hydrargyri et Potassii Iodidi, U.C.H.

Mercuric Iodide 4 grains, Potassium Iodide 4 grains, vater 1 drachm, lard 3 drachms, Hydrous Wool Fat to 1 ounce.

Solubes' Biniodide.

Contain Mercuric Potassium Iodide 8·75 grains 0·57 Gm.). One dissolved in 1 pint of water forms a olution of the strength of 1 in 1,000—suitable for vounds. For lotions and instruments this may be iluted with from 1 to 3 or more parts of water.

Iydrargyri Iodidum Flavum. Yellow Mercurous Iodide.

(Must not be confounded with the yellow variety of Mercuric Iodide).

Dose.—⅛ grain (0·008 Gm.).

Pills and Tablets containing ⅛ grain. Is given for philis, but the following preparation is better known :—

Iydrargyri Iodidum Viride. (B.P. 1867). reen Iodide of Mercury, Mercurous Iodide.

Dose.—⅙ to 1 grain (0·01 to 0·065 Gm.). **Pills** ontain ⅙ and ⅓, ¼ and ½ grain, and **Tablets** contain ⅛ rain.

This salt should be kept from the light, be of a yellowish-green colour, and contain slight excess o mercury; otherwise, as the late W. M. showed, it is unstable and dangerous.—P.J. 1890,259; B.J.M. ii./90 642.

Under treatment of syphilis, in diabetic patient, by the green iodide, amount of sugar fell from 4—6 per cent. t 1 per cent. without change of diet.—Pr. li.134.

Hydrargyri Lactas.,

Dose.—Hypodermically ¼ grain (0·015 Gm.) in 15 minims (1 Cc.) of water per diem, per os $\frac{1}{5}$ grain (0·013 Gm.) well diluted.

A white crystalline compound soluble about 1 in 7 o water, insoluble in alcohol 90 per cent. containing over 50 per cent. of mercury.

This salt is recommended as antisyphilitic on account of its solubility and non-irritability.

Hydrargyi Nitras, Mercurous Nitrate.

In colourless monoclinic crystals, generally eithe damp (from adhering acid) and soluble in water, o yellow tinted (from basic salt), then not perfectly soluble in water. Used for syphilitic sores, 1 in 30 o more, as a lotion or ointment, and occasionally internall in same dose as mercuric chloride.

Liquor Hydrargyri Nitratis Acidus. (*Off.*)

Used as a caustic for syphylitic warts and lupus.

Unguentum Hydrargyi Nitratis. (*Off.*).

Mercury 1, Nitric Acid 4 (fluid), Lard 4, Olive Oil 7 (weight).

Dissolve the mercury in the nitric acid without th aid of heat, agitating gently from time to time. Mel the lard in the oil contained in an evaporating dis capable of holding six times the quantity; heat th mixture to a temperature of about 280° F. (137·7° C.) add by degrees very carefully the cold mercurial solution, stirring constantly until cold. The product shoul be of a pale lemon colour.

Some mercurous nitrate remains in the mercuric solutio before this is added to the fats. There being also an excess o acid present, the chemical action is thus intensified, and b the time the process is completed, by constant and vigorou agitation, all further chemical action will cease, and th ointment will keep of a good colour for months withou generating more gases and thus becoming spongy. Its preparation by this, the official process, requires care, skill, and constant attention. Alternative process:—

Dissolve the Mercury in the Nitric Acid with the aid of a little heat; place the Lard and the Oil contained in a porcelain vessel capable of holding six times the quantity, in a water bath, and heat the mixture to about 190° F. (87·7° C.), add gradually the solution of Mercury also at about the same emperature; mix thoroughly, modifying the action by the water-bath. The mixture should froth up, and be stirred until cold. The ointment made by this process, however well tirred, is apt to become spongy.

Unguentum Hydrargyri Nitratis Dilutum (*Off.*).

Mercuric Nitrate Ointment 1, Soft Paraffin (yellow) 4.

Unguentum Acidi Carbolici Compositum. V.C.H.

Mercuric Nitrate Ointment 2, Sublimed Sulphur ½, Phenol 1, Olive Oil 1, Yellow Wax 1.

Unguentum Metallorum, G.H.

Diluted Mercuric Nitrate Ointment, Lead Acetate Ointment, Zinc Ointment, of each equal parts.

Unguentum Hydrargyri Nitratis Perdilutum. St. George's H. has Mercuric Nitrate Ointment 1. Simple (B.P.1885) ointment 7.

ydrargyri Perchloridum. Mercuric Chloride (*Off.*); **Hydrargyri Chloridum Corrosivum, U.S.**; Corrosive Sublimate.

In heavy colourless crystalline lumps, soluble 1 in 7·9 water at 60° F., 1 in 3·64 of Alcohol 90 per cent. 60° F., 1 in Ether, P.B. (0·720) 4·35 at 58·5° F.—J. ii./03,881, and 2 in 3 of glycerin *vide infra.*

Dose.—$\frac{1}{32}$ to $\frac{1}{16}$ grain (0·002 to 0·004 Gm.), creased to ¼ grain.

The official preparations are Lotio Hydrargyri Flava 46 to 100, or 2 grains to 1 ounce solution of lime), d Liquor Hydrargyri Perchloridi [Mercuric Chloride Distilled Water 875; *dose*, ½ to 1 dr. (1·8 to 3·5 c.)].*

Formerly equal weights of mercuric chloride and ammonium chloride were contained in the official solution. The e W. Martindale showed that in this solution a double t was formed, ammonio-mercuric chloride or *Sal Alembroth*, h an excess of chloride of ammonium present. The ution thus prepared with common water (containing bonate of lime) in place of distilled, or if even diluted h common water, lets fall a white precipitate, if diluted

Mercuric Chloride precipitates most alkaloids from solutions, and should therefore not be ordered with them; the alkalies and the salts of silver and lead are also incompatibles.

For eye lotions 1 in 4,500 parts of water, and for lotions for the nose and mouth and vagina the same strength is suitable. R.O.H. gives 1 grain in 8 ounces of water for eye lotion.

The researches of Koch and others having proved this corrosive poison to be the most powerful antiseptic, solutions of it are much used as surgical dressings. A solution 1 in 1,000 of water, or preferably an equivalent of the strong **Glycerin Solution** (Perchloride, 2; Glycerin by weight, 3, dissolved without heat; heat reduces the salt to calomel), a fluid drachm, containing about 40 grains of the sublimate, to 4½ pints, suggested for military use.—B.M.J. i./84,365,1018. As dressings, lint, absorbent wool, gauze, or **Wood Wool** (*v.p* 419) may be impregnated with ½ per cent. of each, corrosive sublimate and glycerin. Wood wool enclosed in sublimate gauze, both charged with ¼ °/₀ of sublimate, the best artificial sponges.—B.M.J. i./91,448.

Lotio Hydrargyri Acetica.

Mercuric Chloride 1, Acetic Acid 75, Glycerin 75, Alcohol (90 per cent.) 250, Rose Water 500. To destroy pediculi and detach their ova.

Pigmentum contra Tineam.

Mercuric Chloride 1, Salicylic Acid 9, Phenol 10, Glycerin 80. Efficient in ringworm.

Pills are made containing $\frac{1}{40}$, $\frac{1}{32}$, $\frac{1}{20}$, $\frac{1}{16}$, and $\frac{1}{12}$ grain of Mercuric Chloride.

Ophthalmic discs contain $\frac{1}{100,000}$ grain **Mercuric Chloride** combined with gelatin.

Sublimate Disinfectant.—*Local Government Board* —L. ii./92,682; B.M.J. ii./93,18.

Sublimate ½ ounce, Hydrochloric Acid 1 ounce Soluble Aniline Blue 5 grains, Water 3 gallons.

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much scarcely a trace of mercury is left in solution.—P.J. 1870,544. **Van Swieten's Solution** (Codex consists of one part of mercuric chloride in 900 of wate and 100 of alcohol; the B.P. *Liquor* was intended t supplant this. Exposure to sunlight reduces a solutio of sublimate. Acidulating with hydrochloric or tartari acid is said to prevent the precipitation of insoluble albuminat of mercury, and thus to increase and render its antisepti power continuous.—B.M.J. i./88,148; P.J. 1889,841.

Lotio Hydrargyri Perchloridi Acida, St. Th. H., has Sublimate 1 ounce, Hydrochloric Acid 25 ounces, water to 500 ounces for the disinfection of excreta. This is a *powerful caustic*, and is not a lotion in the ordinary sense of the word.

Perchloride 'Solubes' are made of three sizes, combined with sodium chloride, and coloured blue. They are convenient for surgical purposes, the *largest* containing 17½ grains, making 20 ounces, 1 in 500; the *next smaller* containing 8·75 grains, 20 ounces of lotion, 1 in 1,000. These should be further diluted with from one to three or more parts of warm water before use. The *smallest* containing ½ grain, producing a solution of 1 in 4,500 when dissolved in a tumbler of warm water, suitable for ophthalmic work.—L. ii./90,72; P.J. 1890,83.

NOTE.—'Solube' signifies material for preparation f solutions for external or local use.

ablets, $\frac{1}{100}$ and $\frac{1}{16}$ grain are for internal administration. **Hypodermic,** $\frac{1}{80}$, $\frac{1}{50}$, $\frac{1}{30}$ gr.

For gonorrhœa and gleet a lotion of 1 to 2 gr. in 8 unces is recommended.

For ear discharges, syringing with 1 in 10,000 is anti- ptic.—Edin. Med. Jour. 1884,665. The glycerin solu- on is recommended as a pigment in diphtheria. xty cases of diphtheria treated with perchloride of ercury; addition of Fowler's solution beneficial.— .M.J. i./91,14,223.

The soluble salts of mercury and their internal and al use in the treatment of diphtheria.—L. ii./94,379.

Solutions 1 in 10,000 to 1 in 1,000 may be used for ected linen, the walls and floors of infected rooms, the nds of surgeons and gynæcologists, and as a lotion to perficial wounds. For continuous applications, 1 in ,000 forms an active lotion, and 1 in 500, with the ne quantity of permanganate of potassium, is an cient disinfector of an equal bulk of liquid fæcal ected discharges, if in contact not less than two rs.

here is some risk of poisonous effects from vaginal ctions of 1 in 1,000; watch for the occurrence of rhœa.

Cases of salivation by washing out vagina with 1 in 3,000 lotion.—B.M.J.E. ii./91,116,123. Poisonous effects from 1 in 8,000.—B.M.J. i./04,450.

Lotion of 1 in 2000 used in 1138 successive parturitions, no death.—B.M.J. ii./93,1129.

Tinea destroyed by solution of 3 grains in an ounce of spirit of nitrous ether.—B.M.J. i./85,434.

Of use in diarrhœa due to fermentation and irritation of the intestines in children; $\frac{1}{80}$ grain frequently.—R.; B.M.J.E. ii./90,23; L. ii./93,531.

Hypodermic injection of 1 in 1,000 solution successful in three cases of anthrax.—B.M.J. ii./90,16; L. ii./91, 658.

Lupus, in initial stage, subcutaneous injection of 1 per cent. solution into affected tissue successful.—L. ii./95, 965.

Leprosy, two cases, relieved by subcutaneous injection of $\frac{1}{5}$ grain per week.—L. ii./96,364.

Empyema, three tappings and two injections of $\frac{1}{4}$ gr. Perchloride in $2\frac{1}{2}$ ounces of water with marked improvement.—B.M.J. i./03,78.

For nævi apply a 6 per cent. Solution of Perchloride in Collodion.—B.M.J.E. ii./03,96.

Sal Alembroth.—*Syn.* **Ammonio - Mercuric Chloride.**

Contains one molecule of the sublimate combined with two of ammonium chloride, and may be made by mixing solutions of molecular quantities (271 of the former, 107 of the latter), and evaporating; 3 grains contain 2 grains of sublimate. Is in flattened rhombic prisms, soluble in less than its own weight of water. Possesses powerful antiseptic properties, but does not combine with albumen so quickly as the pure sublimate, and therefore is not so irritating to animal tissues.

Sal Alembroth has been used as an intramuscular injection for syphilis; $\frac{1}{2}$ grain in water injected into buttocks.

Hydrargyri Salicylas, Hydrargyrum Salicylicum, P.G. iv. *Dose.*—$\frac{1}{3}$ grain (0·02 Gm.).

A white powder containing about 59 per cent. of mercury, slightly soluble in water (about 1 in 4000), very slightly soluble in alcohol 90 per cent. Given as an antiseptic and antisyphilitic, and used as a dusting powder or ointment for specific sores. Should not be given in large doses with iodide of potassium.—Pr. lxx.570.

This is the basic Mercuric Salicylate as distinguished from the neutral or normal salt. Hydrogen Sulphide distinguishes easily, the normal salt being precipitated at once, the other slowly. Two mercurous salts are also known.—Y.B.P. 1903,294.

Suspended in liquid paraffin, may be used for injection into the gluteal muscles, or subcutaneously. As an injection for gonorrhœa use 15 minims of a mucilage containing 1 part in 300.

Protectyl.

A mucilaginous fluid containing this salt is supplied in collapsible metal tubes, and is used as a preventive of venereal infection; it is alleged to kill both gonococci and streptococci.—L. ii./03,761.

Hydrargyri Subchloridum, Mercurous Chloride.—*Syn.* CALOMEL (*Off.*).

Dose.—$\frac{1}{2}$ to 5 grains (0·032 to 0·32 Gm.).

Tablets, $\frac{1}{10}$, $\frac{1}{6}$, $\frac{1}{2}$, 1, 2, 3, 4, and 5 grains.

Lotio Hydrargyri Nigra (*Off.*).

Mercurous Chloride 30 grains, Glycerin $\frac{1}{2}$ ounce, Mucilage of Tragacanth, $1\frac{1}{4}$ ounces, Solution of Lime *q.s.* to 10 ounces (about in 150).

Pilula Hydrargyri Subchloridi Composita.—*Syn.* PLUMMER'S PILL (*Off.*).

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Mercurous Chloride 25, Sulphurated Antimony 25, Guaiacum Resin, 50, Castor Oil (by weight) 10·3, Alcohol (90 per cent.) 3 or *q.s.*

Pulvis Basilicus.

Dose for child of 2 years, 4 grains (0·26 Gm.); of 6 years or upwards, 8 grains (0·52 Gm.).

Mercurous Chloride 3, Scammony 3, Acid Potassium Tartrate 3, Jalap 1, Ginger 1, Antimonial Powder 1.

Unguentum Hydrargyri Subchloridi, Mercurous Chloride Ointment.—*Syn.* CALOMEL OINTMENT. (*Off.*).

Mercurous Chloride 1, Benzoated Lard 9.

Hydrargyri Succinimidum, Succinimide or Imido-succinate of Mercury.

A white silky powder, freely soluble in water; does not precipitate albumen or fluids of pleuritic effusion or hydrocele. Recommended as a hypodermic injection in syphilis, in 2 per cent. solution (=1 per cent. of mercury.) Addition of cocaine to diminish pain should not exceed 1 per cent., or precipitation takes place. Is said to preclude the formation of abscesses; is comparatively painless, and does not prevent patients following their vocation.

Dose by injection, $\frac{1}{6}$ to $\frac{1}{4}$ grain (0·01 to 0·016 Gm.). Valuable in primary and secondary cases of no great severity, especially in women and children, because of its slight tendency to produce local irritation.—L. ii./90, 778; i./02,1712.

Hydrargyri Tannas, Mercurous Tannate.

Dose.—1$\frac{1}{2}$ grain (0·1 Gm.) in a pill. Should it cause diarrhœa in weakly patients add $\frac{3}{4}$ grain of tannic acid to each, or $\frac{1}{12}$ grain of powdered opium.

In dark green, odourless and tasteless powder or scales, containing 50 per cent. of mercury. It is not soluble or materially affected by diluted hydrochloric acid, but easily so by alkalies and their carbonates, separating a magma containing very minute particles of mercury. It is rapidly absorbed and produces no unpleasant after effects. **Pills** are made containing 1, 2, 3, and 4 grains.

Unguentum Hydrargyri Oxidi Flavi. (*Off.*).

Yellow Mercuric Oxide, in very fine powder, 1, Soft Paraffin, yellow, 49. Used for inflamed eyelids, &c. Pagenstecher's Ointment is 4 per cent. or double this strength; ointments of 1·25, 2·5, 5, and 10 per cent. are also prepared.

'**Collapsubes**' are the most satisfactory means of dispensing, and are supplied containing all the above strengths.

U.C.H. has this ointment in strengths (No. 1) 1 to 7, (No. 2) 1 to 16, (No. 3) 1 to 60.

Injections of 2 grains yellow oxide of mercury suspended in liquid paraffin useful in syphilis.—L.ii./89,757.

Unguentum Hydrargyri Oxidi Rubri.—*Syn.* Red Precipitate Ointment. (*Off.*).

Red Mercuric Oxide, in very fine powder, 1, Paraffin Ointment 9.

The Yellow and Red Oxides are chemically identical;

the red is crystalline, but the yellow is amorphous by precipitation.

Unguentum Rubrum cum Cantharide. V. C. H. Red Mercuric Oxide 1 drachm, Vinegar of Cantharides 1 drachm, Soft Paraffin to 1 ounce.

Hydrargyri Naphthol-acetas, Mercur-β-Naphthol Acetate.

Dose.—½ to 1 grain (0·032 to 0·065 Gm.).

An amorphous odourless white powder, insoluble in the usual solvents, melting to a green oily liquid. Diluted with kieselguhr, or in gauze or salvemull, or triturated with fresh albumen and diluted with water, is useful to promote healing of wounds; it is also a mild antisyphilitic.

Hydrargyri et Sodii Disulphocarbolas. *Syn.*—HERMOPHENYL.

Dose.—Hypodermically ⅛ grain (0·008 Gm.) in 1 drachm of water (3·5 Cc.). By the mouth ⅔ to 1⅓ grain (0·04 to 0·08 Gm.) per diem.

A white crystalline compound used as an antisyphylitic: contains 40 per cent. Mercury. Soluble 1 in 5 of cold water. 1 to 2 per cent. solutions are suitable for local application. Ointment with Soft Paraffin basis 1 in 30, Collyrium 1 in 30, Urethral injection 1 in 250.—P.J. ii./01, 244,245,313.

Savon d'Hermophenyl is also prepared.

Hydrargyri Thymolacetas, Mercury Thymol Acetate. A white microcrystalline powder, soluble in dilute alcohol, insoluble in water. Has been used successfully in syphilis as an intra-muscular injection, 1 in 10 of liquid paraffin, also in pills, in doses of ¾ to 1½ grains (0·05 to 0·1 Gm.).—P.J. 1888,427; 1889,607,341.

Injections of insoluble mercurials sometimes followed by intestinal disturbances and dysenteric conditions, cough, cyanosis, and back pains.—B.M.J. ii./89,1062.

Hypodermic Injections of Solutions of **Mercuric Oxide,** in combination with **Asparagin** (*v.p.*102) and with **Formamide** (the amide of formic acid), have been employed, and have the advantage of being aqueous solutions; injections of insoluble mercurials producing risk of pneumonia. —L.i./90,562; ii./90,783; B.M.J.E. i./92,52.

Report on 1573 injections of various mercurials—calomel the most active, grey oil the least. They should only be used in early stages and when rapid action desired; this rapidity of action the only advantage, and is more than balanced by inconveniences.—Th. Gaz. 1890,617.

HYDRASTIS RHIZOMA (*Off.*).

Syn. Golden Seal.

Dose.—10 to 30 grains (0·65 to 2 Gm.).

The dried rhizome and rootlets of *Hydrastis canadensis.* It possesses tonic stomachic properties, is used in intermittent fevers, and causes uterine contraction. It contains a quantity of berberine (*v.p.*298), and the alkaloid hydrastine.

Extractum Hydrastis Liquidum. (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Hydrastis in No. 60 powder, with 45 per cent. alcohol as a menstruum, prepared as Extractum Hamamelidis Liquidum; 1=1 of rhizome. **Extractum Hydrastis fluidum P. Aus. Add.**, contains 10 per cent. of glycerin.

Capsules are prepared each equivalent to 30 minims of the liquid extract.

Mistura Hydrastis et Ergotæ.

Liquid Extracts of Hydrastis and Ergot of each 30 minims. Chloroform Water to 1 ounce for a dose.

This is one of the most powerful remedies for menorrhagia.

Extractum Hydrastis.—Prepared by evaporation of the above.

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

Extract of *Codex Supp.* is prepared with 60 per cent. alcohol.

Capsules of Hydrastis are prepared each equivalent to 30 minims of the liquid extract.

Hydrastina, Hydrastine.

Dose.—½ to 1 grain (0·032 to 0·065 Gm.).

Pills containing ¾ and 1 grain are made.

An alkaloid in white prismatic crystals resembling strychnine in appearance, insoluble in water, but soluble in alcohol, chloroform, and ether, taste very bitter.

Has been found to produce uterine action and induce bortion, without danger to the patient, injected hypodernically.—L. i./86,991.

Hydrastinæ Hydrochloridum.

Dose.—½ to 1 grain (0·032 to 0·065 Gm.).

A crystalline soluble salt; is used like the pure lkaloid and is said to act as an expectorant.

General research on the action of Hydrastine Hydrohloride.—B.M.J. ii./98,1052.

Hydrastinæ Tartras Acidus.

Dose.—½ to 1 grain (0·032 to 0·065 Gm.).

In fine white needles, sparingly soluble in water.

Hydrastininæ Hydrochloricum, P.G. iv.

Dose.—½ grain (0·032 Gm.).

A salt of **Hydrastinine**, an oxidation product of Hydrastine, is allied to Cotarnine, *v.p.*363.

In pale citron yellow crystals, soluble 1 in 1 of ater. Has been used for internal hæmorrhage hypoermically. Useful in menorrhagia and dysmenorrhœa.

Hydrastinine is an oxidation product of hydrastine, nd probably the finally active element in administration. t acts immediately, while other preparations require ome days' administration before any decisive effect is roduced. *Dose.*—⅗ grain 4 or 5 times daily.

Is distinctly more powerful than ergot, is ecbolic in ldition to its action on vascular contraction. M.C. ov. 94,113.

Hydrastinum, B.P.C.—**Eclectic Remedy.**

Dose.—½ to 2 grains (0·032 to 0·13 Gm.) in pill.

This is made by extracting with 60 per cent. alcohol, ut should be made with stronger alcohol and standrdised to contain 20 per cent. of total alkaloids, of hich ⅔ should be Hydrastine.—P.J.ii./01,140.

It is of yellow colour, and is aperient, cholagogue, omachic, and tonic; is also used as a dressing to cers acting as an antiseptic.

3 to 6 grains in a pill, followed by effervescing sodium lphate, is a useful biliary stimulant.

inctura Hydrastis (*Off.*).

Dose.—30 to 60 minims (1·8 to 3·5 Cc.).

Hydrastis, in No. 60 powder, 1 in 10 of alcohol (60 r cent.).

In gastric catarrh from chronic alcoholism is about the best substitute for the stimulant when this is abandone Useful in atonic dyspepsia, habitual constipation due t inaction of the liver, and in general debility it is ver efficacious, its action being not unlike that of quinin It is also employed as an injection for gonorrhœ 2 drachms to a pint of water used very frequently first. As a lotion it is employed in chronic in flammation of the mucous membranes, also for crac and fissures of the nipple.

It is useful in fibroid tumours; does not cause painf contractions, and the application of hydrastis is invariab successful in chronic pharyngitis.

Successful use in goitre.—B.M.J.E. i./02,67.

Given for hæmoptysis in phthisis entirely prevent night sweats.—Ed.M.J., 1891,473.

Berberinæ Carbonas.

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

Although contained in hydrastis and calumba, obtained principally from the bark of *Berberis vulgar* and other species of Barberry. It is in bitter, yellowis brown, acicular crystals, insoluble in water. It for with chloroform, ether, and alcohol, crystalline co pounds. Its salts, the **Hydrochloride, Phosphat** and **Sulphate,** are bright yellow in colour, and solu in water, the hydrochloride about 1 in 400, the phosph 1 in 12, and the sulphate 1 in 150. *Dose* of each. 2 to 6 grains (0·13 to 0·4 Gm.). Given for indigesti diarrhœa, malaria, and sickness in pregnancy.

Occurrence and detection of in plants.—Y.B. 1902,40.

HYDROGENII PEROXIDI LIQUOR. (*Off*

Syn. **Aqua Hydrogenii Dioxidi, U.S.**

Dose.—½ to 2 drachms (1·8 to 7 Cc.).

The official solution should contain ten volumes available oxygen when decomposed—*i.e.*, 1 c.c. v evolve 10 c.c. of oxygen, or 1·45 per cent. of its weight 3·04 per cent. of H_2O_2. It is also made commercially t and three times this strength. Hydrogen Perox is produced naturally in many ways, as by the ra oxidation of some essential oils, oil of turpentine, oil eucalyptus, &c. It forms the active ingredient in the infectant known as Sanitas (*v.p.*417). The solut ssesses bleaching properties (is used for bleaching ladies' ir), has a harsh, bitter taste, is odourless, or nearly so. has the second atom of oxygen in a very loose state of mbination. It readily decomposes, especially in contact ith a metallic oxide, such as that of silver or man- nese, these if moist, and freshly precipitated, cause ygen to be briskly evolved from it. Ether restrains is decomposition, and this fact is made use of for e production of Ozonic Ether (*vide* below).

In the official process of estimation, saturated agnesium sulphate solution is better than sodium loride solution.—C. & D. ii./01,222.

Is useful for assisting in removing surgical dressings ich adhere obstinately.

It is valuable as a pigment or spray, and has been ven internally in diphtheria, and as a deodorizer.

For tuberculous ulcers, gangrene, malignant pustule d for purulent discharges, is a local astringent and tiseptic, colourless, odourless, painless, does not stain d is not poisonous. Otitis may be treated with 10 to per cent. lotions, and diphtheritic conjunctivitis with 3 per cent. lotion. Empyemal cavities have been shed out with diluted solutions. Heals corneal cers.—B.M.J. i./04,432.

Gastric disturbances treated by peroxide of hydrogen ernally, 1 drachm before meals.—B.M.J.E. ii./92,48.

Stomatitis, solutions of 2 per cent. and upwards as uthwash; B.M.J.E. i./94,23.

Chilblains are well treated with—if broken, borax may added to it.—P.J.—ii./02,17.

Iodometric Determination.—Y.B.P. 1901,71.

psules (Glass) of Hydrogen Peroxide, 10 volume and 20 volume, are prepared containing 20 minims. These have pointed ends to snap off, and are useful in dentistry and for purposes where a small quantity of solution is required.

onic Ether.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Ether containing in solution hydrogen peroxide of volume strength with some alcohol. It is miscible h water, possesses properties similar to the above, and is re stable. In conjunction with Tincture of Guaia- ı, it is employed as a test for blood, *v.p.*597.

Hydrogen Peroxide and Ozonic Ether have been give internally for diabetes and whooping-cough, and Ozon Ether is used locally for scarlet fever.

Magnesii Peroxidum. *Syn.* HOPOGAN.

Dose.—“ One third to one whole teaspoonful.”

A white tasteless powder, insoluble in water, contai ing 15 per cent. of Magnesium Peroxide and son Magnesium Oxide, is for internal use where increas oxidation is desired; given for anæmia.—B.M.J. i./o 205; P.J. ii./03,764; L. i./04,35.

For anorexia, flatulence and pyrosis. — B.M.J. i./04,44.

Tablets contain 0·3 Gm.

Zinci Peroxidum. *Syn.* EKTOGAN.

A white powder insoluble in water. Has been us locally in skin affections.—P.J. ii./03,764; L. i./04,3

Promotes the healing of chronic ulcers.—B.M.J. i./04,44.

Sodii Peroxidum, Sodium Dioxide.

A white amorphous deliquescent powder, dissolves water with production of heat and evolution of oxyge 1 part mixed gradually with 8 of ice forms a bleachi and antiseptic solution useful in tooth stopping.

Anhydrous Soap containing 10 to 20 per cent. Sodiu Dioxide and made into a paste with liquid paraffin, us by Unna with marked success in various forms of aci —P.J. ii./99,506.

Cubes of Sodium Peroxide.

Commonly known as “ Solid Oxygen.” Are suppli for producing oxygen in a patented **Oxygenato** This is capable of producing 25 cubic feet of gas wh fully charged.

By patent, No. 11,466, 1901, Jaubert employs mixture of 200 parts of chloride of lime or the equiv lent quantity of alkaline earth or alkaline hypochlor in powder, titrating 35·5 per cent. of available chlori well dried, with 78 parts of Sodium Peroxide. Tl forms a yellowish white powder which may be co pressed into pastilles of a hard china-like appearan and may be similarly used in a generator for the p duction of oxygen. It is claimed that oxygen produ by this means is pure.

xygen.

Oxygen is obtained from the air by first dehydrating id decarbonising it with quicklime; the oxygen is then parated from the nitrogen by being absorbed by caustic ryta exposed under pressure to a high temperature; e barium peroxide formed yields pure oxygen on ing heated at a lower temperature; it is sold comessed in **Cylinders** containing 12 or 20 cubic feet id upwards for inhalation from an **Inhalation ag**. By the aid of this, if desired, the oxygen may mixed with air as it is administered to the patient. iling this apparatus the gas may be passed direct into e patient's mouth by means of a glass mouth-piece, or a glass funnel which is suspended above the face.

An **Oxygen Apparatus** has been arranged for e extemporaneous production of oxygen and is suitable here small quantities are administered from time to me It consists of a flask, stoppered funnel, an angle" containing absorbent wool for filtering the gas, id a yard of flexible tubing with mouth-piece. The **aterial** supplied is placed (about ½ a tinful) in e dry flask, and connected up as directed, water allowed to drop slowly on the material from the oppered funnel and the oxygen is evolved. The pparatus should be moved slightly from time to time dislodge the "cake" that may be formed in the flask. he tin of material yields about 3 cubic feet of oxygen.

Inhalation of oxygen is of great service in pneumonia. onchitis, asthma, angina, and some stages of phthisis, relieves dyspnœa, and reduces temperature. May be ed after chloroform to accelerate recovery.

The best cardiac and respiratory stimulant.—B.M.J. '92,179; ii./93,843; B.M.J.E. ii./91,133.

Inhalation in cardiac failure and Bright's disease ccessful.—B.M.J. ii./92,942.

A successful antidote to morphine, opium, strychnine id carbon monoxide poisoning, and for resuscitation ter partial drowning.

Two cases of uræmic coma and morphine poisoning— ustrating the value of oxygen.—L. ii./95,1128.

To avoid death from inhalation of nitrous oxide, ygen recommended.—L. i./94,902,971.

Successful local use of oxygen in ulcers and alopecia.

—L. i./95,811; B.M.J. i./96,1087,1187; ii./96,1208 L. i./97,1465; ii./98,1545.

Peritonitis relieved by injections of 1 to 2 litres of oxygen gas.—B.M.J.E. ii./98,75.

The same for infantile dysentery and enteritis.—L i./02,392.

Useful for tinnitus and deafness.—L. i./00,510.

Endovenous injection of 120 Cc. of oxygen slowly in the case of a patient *in extremis*.—L. i./03,75.

Consumption arrested by treatment at the Oxygen Hospital, also ulcers distinctly improved by. — L. ii./03,274.

HYDROQUINONE.

Syns. QUINOL, HYDROCHINON (German).

Dose.—½ to 5 grains (0·032 to 0·32 Gm.).

An isomeride of Resorcin and Pyrocatechin. May be prepared from quinic acid by dry distillation, but is principally obtained as a derivative of coal tar. It is neutral, inodorous, has a sweetish taste, soluble 1 in 20 of water, soluble also in alcohol and ether, and slightly so in olive oil. It possesses stronger antiseptic and antipyretic properties than Resorcin. Gramme doses cause symptoms of excitement like Resorcin. It causes no local irritation injected hypodermically, is particularly suitable as an antiseptic in eye operations, useful also in infectious parasitic corneal ulcers, lessens the secretions, does not irritate the conjunctiva or cornea, and has a certain antiseptic action on the diphtheritic process. Like carbolic acid as an antifermentative, and boric acid in the little irritation it causes.

Hydroquinone, is used as a photographic developing agent (*v.p.*445.).

HYOSCINA.

A thick syrupy alkaloid, isomeric with cocaine (?) contained in *Hyoscyamus niger*, different species of *Scopola*, *Datura alba*, the flowers of which yield 0·5 per cent., and other solanaceous plants.

Ernst Schmidt maintained that Hyoscine consists principally of **Scopolamine**, and that the commercial Hyoscine Hydrobromide consists essentially of Scopolamine Hydrobromide. From a therapeutic point of view this is simply an alteration of name, *v.pp.*103,536.

Atroscine or *i*-Scopolamine is an isomer of Hyoscine. was obtained by Hesse from commercial Scopolamine ydrobromide as two hydrates. Anhydrous Atroscine Hydroomide melts at 181°C. and is optically inactive. Atroscine its up into Oscine and Atropic acid when treated with ute potash. He indicates the following relationship of ese alkaloids :—

Hyoscyamine ⋙→ Atropine ⋙→ Tropine + Atropic Acid.
Hyoscine ⋙→ Atroscine ⋙→ Oscine + Atropic Acid.—
P.J. i./oo,116.

Oleum Hyoscinæ, 1 per cent. in Castor Oil. Causes a ydriasis which is certain, quick in onset, and of transient ect. **Unguentum Hyoscinæ**, Hyoscine ½, Lard 99½, at to dissolve. (R.O.H. has Hyoscine Hydrobromide ½, ycerin *q.s.*, Soft Paraffin 100.)

Hyoscinæ Hydrobromidum (*Off.*). **Scopolainum Hydrobromicum P.G. iv.**

In white rhombic crystals, soluble 1 in 4 of water, in 14 of alcohol. Melts at 193° to 194° C. (*Off.*); 0° C.—P.G. iv. *Dose.*—$\frac{1}{200}$ to $\frac{1}{100}$ grain (0·00032 0·00065 Gm.), increased to $\frac{1}{50}$ grain.

uttæ Hyoscinæ, R.O.H., 0·5 in 100.—**St. Thos. H.**, 0·5 or 1 per cent.

uttæ Hyoscinæ et Cocainæ, St. Thos. H. Hyoscine Hydrobromide 0·5, Cocaine Hydrochloride 0 per cent.

jectio Hyoscinæ Hypodermica. 1 grain in 200 minims. *Dose.*—1 to 2 minims.

iquor Hyoscinæ Hydrobromidi, 1 in 1,000 of chloroform water.

Dose.—3 to 15 minims (0·18 to 0·9 Cc.)

ilula Hyoscinæ Hydrobromidi, $\frac{1}{150}$ grain in each.

ypodermic Tablets, $\frac{1}{200}$, $\frac{1}{100}$ and $\frac{1}{75}$ grain in each. Severe poisonous effects from $\frac{1}{12}$ grain.—L. i./04,24.

copolamine-Morphine Anæsthesia (Schneiderlein). This has been used to produce general anæsthesia. Scopolamine Hydrobromide $\frac{1}{200}$ to $\frac{1}{64}$ grain (B.M.J.E. ii./01,44) or more, and a salt of Morphine $\frac{1}{7}$ to $\frac{1}{2}$ grain are injected on the evening before the operation, and a similar or higher dose in the morning before the operation. This alone may suffice to produce deep sleep. If not, ether may be given, or Schneiderlein applies a few drops of chloroform or ether until complete anaesthesia occurs. Patients sleep for hours through the first painful periods after the operation.

Volckman gives about $\frac{1}{5}$ grain of Scopolamine Hydrobromide and about $\frac{1}{4}$ grain of Morphine Salt 4 hours before the operation; repeating the dose in 2 hours; and then $\frac{1}{4}$ hour before the operation gives $\frac{1}{20}$ grain of Scopolamine Salt and $\frac{1}{12}$ grain of Morphine Salt.—B.M.J.E. ii./01,44, i./03,13, i./04 21.

Hyoscinæ Hydrochloridum. In large crystals similar to the hydrobromide.

Dose.—$\frac{1}{200}$ to $\frac{1}{100}$ (0·00032 to 0·00065 Gm.).

Hyoscinæ Hydriodidum. In large whitish crystals with properties like above. *Dose.*—$\frac{1}{200}$ to $\frac{1}{100}$ (0·00032 to 0·00065 Gm.), increased.

Ophthalmic Discs contain $\frac{1}{500}$ and $\frac{1}{200}$ grain similarly combined.

Hyoscine is a powerful narcotic, especially useful in cases of insomnia, in calming excitement and delirium, and producing sleep in acute mania. It is said to have no influence on the respiration, but to increase the action of the heart and circulation. Locally applied it produces rapid, energetic, but brief mydriasis; should be avoided in acute glaucoma.

Has been largely used for the cure of morphine habit. Very contradictory results are reported.—M.A. 04,542.

As **Antidote** Pilocarpine or Caffeine should be administered, also Tannin and Tea.

Given in doses of $\frac{1}{200}$ to $\frac{1}{180}$ grain in Chloroform Water by the mouth, checks nocturnal spermatorrhœa.—W. W. W.

Reduces salivary secretion and perspiration. An excellent palliative for the tremors of paralysis agitans, sclerosis of the spinal cord, and chronic alcoholism.—L. i./90,718; Pr. xlvi.376.

Successful in delirium tremens, insomnia, and maniacal excitement. B.M.J. ii./91,694.

Produces at first slowing of heart, then acceleration. Blood pressure increased, respiration retarded, and irritability of brain diminished.—L. ii./90,414.

Mydriatic effect rapid, complete, and not prolonged.— .. ii. 94,334; B.M.J.E. ii./96.79.

Valuable in puerperal eclampsia.—L. ii./96,940.

Dose generally given, too high, should not be to begin ith above $\frac{1}{600}$ grain, or for night sweats $\frac{1}{150}$ grain.— '.J. i./00,198.

Maniacal attacks successfully warded off by two ypodermic injections of respectively $\frac{1}{100}$ grain of ydrobromide and $\frac{1}{64}$ grain (with $\frac{1}{200}$ grain *per os* tween) and drachm doses of Sodium Bromide.— .M.J. i. 0374.

Paralysis agitans relieved.—B.M.J. ii./03,1589.

HYOSCYAMINA.

Dose.—$\frac{1}{120}$ to $\frac{1}{40}$ grain (0·00054 to 0·0016 Gm.), cases of mania increased to $\frac{1}{16}$ or $\frac{1}{8}$ grain or more, ssolved in water by means of diluted sulphuric acid, in a pill.

ntidotes. *See* Atropine.

An alkaloid obtained from *Hyoscyamus niger*, Henbane. ne dried leaves are said to contain as much as 0·25 per nt. of total alkaloid of which three-fourths may be yoscyamine. Melts commercially at 200° C., officially 206°. (Hyoscyami Folia should consist of leaf only not the branches and flowers. The *tincture* should 10 per cent. strength in alcohol 70 per cent., the *tract* should be solid "containing about 10 per cent. water," and should be prepared by alcohol 70 per nt. C.U.D.). Hyoscyamine is also contained in *Atropa elladonna*, *Duboisia myoporoides*, *Datura Stra- nium*, *Scopola Carniolica*, *S. Japonica*, and other ropaceous plants. The presence of a mydriatic alkaloid *Lactuca virosa*, the strong scented lettuce, has also en determined. Its identity with Hyoscyamine is, however, not as yet certain.—P.J. i./04,186.

Hyoscyamine is an isomer of atropine, into which it n be converted by heating or acting upon it with kali. It is in light snow-white masses of minute ystals, without odour, soluble 1 in 120 of water, freely luble in spirit, and alkaline to test-papers, melting at

108°—109° C. As a mydriatic, it acts like atropine, but with greater intensity, while the duration of effect is about equal.

Hyoscyamine, Amorphous.

Dose.—$\frac{1}{16}$ to $\frac{1}{8}$ grain (0·004 to 0·008 Gm.), increased, given in acute mania.

A dark brown extract-like preparation, having a strong disagreeable odour. It is much less costly than the crystals, and the dose should be about the same.

According to Kobert this owed its activity principally to the Hyoscine it contained.—Pr. xxxvii.321.

Hyoscyaminæ Hydrobromidum.

Dose.—$\frac{1}{120}$ to $\frac{1}{40}$ grain (0·0005 to 0·0016 Gm.) increased.

In small white granular crystals, soluble about 2 in 1 of water.

Hyoscyaminæ Sulphas. (*Off.*) U.S.

Dose.—$\frac{1}{120}$ to $\frac{1}{40}$ grain (0·0005 to 0·0016 Gm.), increased.

In small white granular deliquescent crystals, freel soluble in water (1 in 0·5) and about 1 in 2½ of alcoho 90 per cent.

Injectio Hyoscyaminæ Hypodermica.

Hyoscyamine Sulphate 1 grain, Distilled Wate 2 drachms. *Dose.*—1 to 2 minims.

Hypodermic Tablets of Hyoscyamine contai $\frac{1}{100}$ and $\frac{1}{60}$ grain.

Ophthalmic Discs contain $\frac{1}{5000}$ grain similarl combined.

Pills and **Granules** of **Hyoscyamine** containin $\frac{1}{100}$ grain (or 0·00065 Gm.) are used for se sickness. Dose, one hourly if required. Give occasionally a day or so beforehand, and for th first few days on board.—B.M.J. ii.'93,596.

It removes the pain of neuralgia, has cured mercuri tremor, senile trembling, and paralysis agitans, an relieves puerperal mania and delirium tremens.

When used hypodermically, is most valuable in calmi the violence of a furious maniac, or a noisy, gener paralytic.

Use in mania, $\frac{1}{10}$ grain given three times a day, in- eased to $\frac{1}{3}$ or $\frac{1}{4}$ grain as single doses ; requires care.— .M.J. ii./85,629.

ICHTHYOL.

Syn. AMMONIUM SULPHO-ICHTHYOLATE.

Dose.—10 to 30 grains (0·65 to 2 Gm.) per diem.

A viscous, brownish, almost black substance, with disagreeable tarry benzene odour, containing about i per cent. of sulphur, it is miscible with water and ycerin, with fats ; is obtained by treating the oducts of distillation of a bituminous quartz found the Tyrol with sulphuric acid and neutralizing with umonia. Many remains of fish and other animals are und in the strata whence this quartz is obtained. The posit is probably the remains of decomposed animals d fish, hence its name — Ichthyol. The ammonia mbination is distinctively known as **Ichthyol**.

.thii Sulpho-ichthyolas.

Dose.—10 to 30 grains (0·65 to 2 Gm.) per diem.

dii Sulpho-ichthyolas. F. Ital.

Dose.—10 to 30 grains (0·65 to 2 Gm.) per diem.

nci Sulpho-ichthyolas: Principally for external use.

They are miscible with water, glycerin, fats, oils, oroform, ether, vaseline, and lanoline, imperfectly h alcohol, unless diluted with ether or water, l may be combined with preparations of lead and rcury without the formation of sulphides. They form uable applications for chronic skin diseases, as eczema, riasis, acne, and favus ; as an embrocation, they re- re the pains of chronic rheumatism. The odour may disguised with oil of citronella, which is itself used in ylon for rheumatism.

psules of **Ammonium-Ichthyol** and of **Lithium-Ichthyol**, 4 grains (0·25 Gm.) separately (or combined 2 grains of each) are prepared.

Dose.—1 or 2.

llodion 7 parts, with Ichthyol 1 part, is used for eczema and other skin diseases.

Successful in erysipelas.—B.M.J.E. ii. '92,31.

Pills of *Ammonium - Ichthyol, 2½ grain (0·16 Gm.); Lithium - Ichthyol, 1½ grains (0·1 Gm.); also of Sodium-Ichthyol, 1½ grains (0·1 Gm.).

Dose of either, 4 to 12 daily.

Tablets, 2½ grains (0·165 Gm.). *Dose.*—1 or more.

Solutions of **Ammonium-Ichthyol** in a mixture o equal parts of alcohol and ether contain 10 or 3 per cent.

Pessaries of Ichthyol, 10 per cent. strength, with either Gelatin or Cacao butter basis are used fo leucorrhœa.

Suppositories of Ichthyol may contain 3 grain (0·2 Gm.) with a basis of beeswax 1 and oil of theobroma 2, or may be made very satisfactorily wit Glyco-gelatin basis.

Unguentum Ichthyol may be made to contai from 20 to 50 per cent. with lanoline or with oliv oil and lard.

Ichthyol Resorcin. Ichthyol mixed with 10 pe cent of Resorcin for external application.

Unguentum Ichthyol Compositum, G.H. Ichthyo 1, Solution of Lime 9, Hydrous Wool Fat 5 Sof Paraffin 10, Zinc Ointment 5.

Ichthyol Paste, recommended by Unna for acn rosacea. Starch 40, moisten with Water 20, an rub in Ichthyol 40, and lastly strong solution o Albumen, 1 or 1½. This is painted on the skin quickly dries, and is easily washed off. Anothe formula:—Ammonium Ichthyol 25, Carbolic Acid 2½. Dissolve in warm water 22½, and mix wit starch 50.—L. i./91,622; B.M.J.E. i./91,102.

Ichthyol is used internally in cases of eczema depending on nervous lesions, in neuralgia and constipation and is valuable externally for treating acne and liche Ointments made with 50 and 66 per cent. of Ammonium Ichthyol are recommended for psoriasis externally i weak constitutions, very sensitive skins, or when thes have been affected by stronger remedies. It has bee uccessfully used for acute and chronic rheumatism; it elieves the pain but not the swelling.

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* To make small, mix Ammonium-Ichthyol 120, Magnesiu Oxide 15, Water 120, and evaporate to dryness with stirrin may be massed again with water, 2 grains = 3 grain Ichthyol.—C. D. i./04,444.

For prurigo senilis a 30 per cent. solution in water s recommended; for pruritus, burns, and ulcers a 10 per ent. solution; and internally 2-ounce doses of a 1 per ent. solution for gastric catarrh.

Gonorrhœa, treatment by irrigation with 1 to 2 per ent. solution.—L. i./97,1195.

For burns it may also be used dry, diluted with zinc xide or bismuth (the powder being spread evenly over he surface), in ointment (10 to 50 per cent.), or as com- ination of above methods.

Internal use checks the suppuration of tubercular lands.—L. ii. 03, 384; L. i./04,296.

chthalbin. *Dose.*—$\frac{3}{4}$ to 15 grains (0.05 to 1 Gm.).

A combination of ichthyol and albumen, is an odour- ss and tasteless brown powder. Used internally for zema, nervous intestinal affections and during re- onvalescence from fevers.

Ichthyol-Salicyl is a powder made with either 25, 3$\frac{1}{3}$ or 50 per cent. of sodium salicylate; its application recommended for psoriasis, acne rosacea and for eumatic pains, and has been given internally in pills r tuberculosis.

chthoform. A compound of Ichthyol and Formaldehyde.

Dose.—1$\frac{1}{2}$ to 5 grains (0·1 to 0·3 Gm.).

Has been used for the intestinal disorders occurring in bercular diseases; claimed to be a strong intestinal tiseptic.—L. i./04,717. Combined with salacetol in cachet this substance acts as a useful intestinal anti- ptic in catarrhal conditions.

etrosulfol.

An Ammonium compound prepared from a pitch con- ining sulphur, has similar properties physical, chemical d therapeutical to the corresponding Ichthyol com- und. Used for boils, chilblains, eczema and impetigo. -Therap. 1900,156.

Thigenol is the sodium salt of an organic sulphuric id and has properties similar to those of Ichthyol. A ack viscid liquid, miscible in any proportion with ter or alcohol. Contains 10 per cent. of sulphur, is use for skin diseases; a 5 per cent. ointment relieves zema.—B.M.J.E. ii./03,15.

Sphagnol.

A native tar product said to be produced by th decomposition of peaty deposits in the earth. Sphagnc is employed with success in blepharitis, eczema, piles sores and burns. Is detergent in cases of insect bite in tropical countries.

Sphagnol Ointment 10 per cent. **Medica Soap** (15 per cent.) and **Toilet Soap** (5 per cent. are prepared.

Thiol. *Dose* (of dry) 2 to 10 grains (0·13 to 0·6 Gm.) in pills.

A mixture of sulphonised hydrocarbons, prepare by heating gas oil, obtained in the distillation o coal, with sulphur. Occurs in two forms, (1) in dr black laminæ or powder; and (2) **Thiol Liquidum** a syrupy liquid containing about 40 per cent. of th latter. Thiol is soluble in water, alcohol, and ether but is precipitated on addition of acids. It is ver similar in composition and properties to ichthyol, an is recommended in eczema, intertrigo, erysipelas, burns &c.

An excellent remedy for uterine inflammation an ulcerations of the cervix; quick and painless.—B.M.J.E i./92,22. Use in gynæcological cases.—L. ii./92,1241

Isarol is a preparation similar to Ichthyol.

Tumenol is similarly a sulphonised mineral oil i the form of a brown mass Has antiseptic propertie 21·0 per cent. strength is employed for eczema, lupu &c., as a dusting powder.

Ferrichthol. *Dose.*—1 to 3 tablets thrice daily.

A preparation of Iron and Ichthyol in tablet form.

IODOFORMUM.

Iodoform (*Off.*) TRI-IODOMETHANE.

Dose.—½ to 3 grains (0·032 to 0·2 Gm.) graduall increased.

Iodoform is manufactured by acting upon Alcoho with Iodine in the presence of Caustic Potash soluti at a temperature of about 70° C. It is also produce by the electrolysis of an aqueous solution of Potassiu Carbonate, Potassium Iodide and Alcohol.

In shining yellow hexagonal crystalline scales, wit persistent disagreeable odour resembling that of saffro

Soluble 1 in 8 of absolute ether, 1 in 10 of ether (Sp. Gr. 0·735), 1 in 12 of chloroform, 1 in 95 of 90 per cent. lcohol, 1 in 14 of oil of eucalyptus, 1 in 10 of collodion, 1 n 60 of vaseline and oil of almonds, and about the same n fats and other fixed oils. It is almost insoluble in water, but dissolves 1 in 10 of Rubini's solution of Camphor, which disguises its odour.

Iodoformi Pulvis, as sold, is in reality in very minute crystals. It is preferred for surgical purposes, as it does not clot, but can be dredged on the diseased part.

Iodoformum Præcipitatum, or precipitated Iodoform, is a primrose yellow coloured impalpable powder. It has a slight tendency to form clots. It is used for dusting on sores, and should be employed for preparing ointments for the eyelids.

Iodoform possesses powerful antiseptic as well as slight næsthetic or sedative properties. It is most poisonous o the virus of syphilis and gonorrhœa, and, although contains $\frac{29}{30}$ of its weight of pure iodine, it is ot an irritant, like the latter, either taken by the tomach or applied topically. It is largely employed as general antiseptic in various forms of dressings. Several modes have been suggested of covering its characteristic dour when used for this purpose, such as mixing it with alsam of Peru, oil of eucalyptus, phenol, oil of eppermint, oil of anise, Sanitas oil, otto of rose, tannic cid, oil of sassafras, creolin, thymol, menthol, coumarin, nd Tonquin bean; the two last perfume it, and balsam Peru covers it, but not effectively.

odoformum Aromaticum is scented with Coumarin, 1 in 50.

Iodoform when used for chancres is best applied in hereal solution, or as powder dusted on and covered ith boric acid ointment or gold-beater's skin, or painted ver with flexible collodion.

Taken internally, Iodoform decomposes, and iodine soon found in the urine; not being an irritant like dine, it has been given with good effect when the tter is indicated, and has been of service in cases of ritation of the brain and spinal cord.

uginarium Iodoformi.

Nasal bougies having a gelato-glycerin basis and containing $\frac{1}{6}$ to $\frac{1}{2}$ grain of Iodoform in each. As they gradually dissolve, the action of the Iodoform is sustained.

Collodium cum Iodoformo.

Iodoform 1, Flexible Collodion 12.

Dissolve. Used as a pigment to venereal sores.

Emulsio Iodoformi, U.C.H., G.H.

Iodoform, in fine powder, 1 (Alcohol 90 per cent. *q.s.* to moisten, St. Barts., G.N.C., G.H.), Glycerin 7, Boiled Distilled Water 2. Mix well in above order; for injection into sinuses. One or 2 in warm water 80, a useful bladder antiseptic, *vide* also Injectio below.

L. H. has Iodoform 1 shaken in Formaldehyde solution 10 per cent. 2; allow to stand, decant as much as possible of the liquid and add sterilised Glycerin to 10.

Another form is Iodoform 2, Mucilage of Acacia 4, Glycerin 2, water 20; for use in ulcerated or irritable bladder.

Other formulæ and uses.—B.M.J. i./90, 922. Lister used simply 1 in 10 of glycerin. In **Glycerinum Iodoformi, K.C.H.** the Iodoform is washed with 1 in 20 Phenol Solution. Watson Cheyne, in preparing the Emulsion, has recommended the Iodoform to be sterilised by previously digesting it three days in 5 per cent. phenol solution containing perchloride 1 in 2,000, and the vessels to be sterilised.

Injectio Iodoformi, U.C.H.

Iodoform, in fine powder, 1, Mucilage of Tragacanth 2, Water 7, for bladder injection this is less irritating than the Glycerin Emulsion. **C. L. T. E.** has Saturated Solution of Iodoform in Ether 1, Olive Oil 2. For injecting into goître.

Insufflatio Iodoformi.

Iodoform 2, Starch 1. In specific affections of the throat, antiseptic and mildly caustic.

Insufflatio Iodoformi Composita (W. H. has under the name of **Insufflatio Iodoformi et Morphinæ**) Iodoform 1 grain, Boric Acid 1 grain, Morphine Acetate, $\frac{1}{6}$ grain (Vict. Park has Bismuth Oxychloride 1 grain *vice* Morphine).

Iodoform and Eucalyptus Bougies, Cereolus Iodoformi et Eucalypti.

Iodoform, precipitated ...	5 grains	(0·32 Gm.).
Oil of Eucalyptus ...	10 minims	(0·6 Cc.).
Oil of Theobroma ...	35 grains	(2·32 Gm.).

To make a bougie 4 in long. Used for gonorrhœa. After emptying the bladder, the bougie, dipped in a mixture of eucalyptus and castor oils, or carbolic oil, is introduced into the urethra, and forced up, if possible, an inch beyond the meatus. To absorb discharge, a pad of boric lint is applied over the orifice and retained in position, if the patient is able, by drawing the foreskin over it; outside, gutta-percha tissue and isinglass plaster are used to keep the whole *in situ*, for 5 or 6 hours. Absorbent wool or lint should be placed to catch any discharge escaping. On removal, solution of sulphocarbolate of zinc (2 grs. in 1 oz.) is injected, and in acute cases another bougie introduced. The injection should be used 6 or 7 times a day, for 3 or 4 days. When the acute symptoms have subsided, any remaining discharge may be treated by injections of tannin or sulphate or acetate of zinc.

Cereoli, *Wundstäbchen*, **P.G.** iv., are flexible urethral bougies, tapering at one end, variously medicated, either throughout or on their surface.

Iodoform Varnish, (after Whitehead).

Benzoin 4, Storax 3, Balsam of Tolu 1, Purified Ether 40; dissolve, strain, and add Iodoform 4. For surgical application.

Iodoform Vaseline. Iodoform 1, vaseline 9. A useful surgical dressing for wounds.

Ophthalmic Discs, contain $\frac{1}{1000}$ grain of **Iodoform** combined with gelatin.

Pastillus Iodoformi.

Contains 1 grain of Iodoform (more or less if prescribed) with 18 grains of glyco-gelatin in each pastil. Useful in syphilitic eruptions of the tongue, mouth, and throat, and in chronic pharyngitis.

Pencils of Iodoform, the thickness of a No. 9 catheter, for uterine medication, are prepared with iodoform, glycerin, and gum acacia *q.s.*, and dried.

Pilula Iodoformi. 2 grains.

Dose.—1, two or three times a day.

Plaster Mulls contain 10 grammes of Iodoform in $\frac{1}{5}$ square metre, *v.p.*634.

Suppositoria Iodoformi (*Off.*) contain 3 grains (also 1 and 5 grains) in each, with Oil of Theobroma *q.s* May also be used as a **Pessary**.

Unguentum Iodoformi (*Off.*).

Iodoform 1, Paraffin Ointment, yellow, 9.

Unguentum Iodo - Paraffini, U.C.H., Iodo-Vaseline.

Iodoform 1, Oil of Eucalyptus 8; heat gently till dissolved and add to Paraffin 27, Soft Paraffin 6, melted together. Stir till cold.—B.M.J. ii./82,904.

Collapsubes (Collapsible metal tubes with Catheter attachment) of **Iodoform and Eucalyptus Ointment** of each **5 per cent.**, and of **Iodoform 5 per cent. and Cocaine Ointment 2 per cent.** are useful for the treatment of gonorrhœal diseases.

Iodoform is used in syphilis and naso-pharyngeal affections; in doses of 1 to 2 grains internally, and externally for venereal sores and indolent ulcers where there is no active inflammation. In phlyctenular ophthalmia and ciliary blepharitis an ointment of 1 in 12 of lard has been found useful.

Alveolar abscesses treated by iodoform in conjunction with oil of eucalyptus.—B.M.J. i./80,621.

Soft sores treated by painting with ethereal solution of Iodoform and then covered with a film of collodion or gold-beater's skin.—B.M.J. i./82,340.

Acute and chronic forms of toxic symptoms are produced from its application to wounds.—Pr.xxxvii.271.

May cause vesication.—B.M.J. i./04,297.

Iodoform is a weak germicide not fatal to bacteria.—Ed. M.J. Oct. 1890,389; L. i./93,285; ii./93,1456.

External application may set up a skin disease resembling eczema.—B.M.J. i./94 63.

Iodoform injections beneficial in goitre.—Pr. lvi.334; P.J. ii./96,59; L. ii./99,516.

Iodoform emulsion injected into tuberculous joints with success.—B.M.J. ii./03,77.

Succedanea or Substitutes for Iodoform.

Airogen, Bismuth Oxyiodo-gallate, *v.p.*124.

Aristol.—*Syn.* DI-THYMOL-IODIDE.

Obtained by mixing a solution of iodine in potassium iodide with an alkaline thymol solution.

A reddish brown powder, containing 46·2 per cent. of Iodine, insoluble in water and glycerin, soluble in ether, collodion, and oils; must not be heated or exposed to light. Recommended for psoriasis, lupus, eczema, and for ozæna; is also useful for burns and scalds mixed with soft paraffin, and as a dusting powder alone or mixed with 3 parts starch, talc, &c., for wounds and burns. May be employed (5 to 10 per cent.) with soft paraffin, lard, wool fat, or zinc and starch paste basis, such as Lassar's paste, *v.p.* 524.

Commercial samples have been found to vary in iodine content.—V.B.P. 02,35.

Aristol has a slow effect on venereal ulcers, and has less smell.

Used with success as insufflation in cancer of cervix uteri—relieves pain, stops bleeding, lessens discharge—is not absorbed, therefore non-toxic.—B.M.J.E. ii./91,155.

Collapsubes (*v.p.*217) of aristol ointment 10 per cent. strength for venereal diseases of the urethra.

Di-iodoform.—ETHYLENE PERIODIDE.

In yellow prismatic crystals, almost inodorous, soluble in chloroform and slightly in alcohol and ether, insoluble in water; is partly decomposed by light. Recommended in place of iodoform.—P.J. 1894,622; Pr. lii.126.

Europhen.—ISO-BUTYL-ORTHO-CRESYL-IODIDE.

A yellow amorphous powder, containing 28 per cent. of iodine, with slight saffron odour, insoluble in water and glycerin, soluble in oil, alcohol, ether, and chloroform; is resinous to touch, and adheres well to mucous membrane and wound surface; is five times lighter than Iodoform, and cakes less easily. Is decomposed by light, and must not be heated to prepare solutions or ointments; solutions should be filtered owing to formation of an insoluble iodine compound. Is non-poisonous, and acts only when brought into contact with secreting surfaces, which decompose it and liberate iodine; should not be combined with preparations of starch or metals. Has been used with satisfactory results as powder or ointment (1 to 10 per cent.) in simple and venereal ulcers, and in oily solution (1 or 2 grains), injected daily for syphilis and may be applied for ozæna and otitis.

Tubercular leprosy improved by inunction and subcutaneous injection.—B.M.J.E. i. 93,71.

Iodoformal.

A compound of ethyl-hexamethylene hydriodide and iodoform; is said to possess higher antiseptic properties than either iodoform or iodoformin; may be used as a dusting powder, or 10 per cent. ointment or 20 per cent. sticks with gum arabic for chronic gonorrhœa.

Iodoformin.

A compound of iodoform and hexamethylenetetramine containing 75 per cent. of iodoform, which is liberated by acid or alkaline liquids. Is a white powder, turning yellow on exposure to light, insoluble in water. Is recommended as a dressing for wounds and ulcers, as possessing the properties of iodoform with only a slight odour.—P.J. ii./95,455; L. i./96,856.

Iodoformogen. A combination of Iodoform with 90 per cent. of Albumen for use as a wound dressing.—L. ii./98,154; P.J. i./99,189.

Iodol.—*Syn.* TETRA-IODO-PYRROL.

Dose.–1 to 3 grains (0·065 to 0·2 Gm.).

A micro-crystalline, brownish white powder, obtained by precipitating pyrrol with iodo-iodide of potassium. It gives off iodine vapours on being heated. Insoluble in water, soluble 1 in 145 of glycerin, 1 in 6 of absolute alcohol, 1 in 27 of 90 per cent. alcohol, freely in ether; also soluble in chloroform and oils. It has no unpleasant smell, produces no anæsthetic toxic action, like Iodoform, when wounds are dressed with it, and its application is painless; useful in buboes, indolent and corneal ulcers, and ear discharges.

It explodes if rubbed with mercuric oxide.

An ointment, 1 to 5 of vaseline, and a solution, 3 parts to 35 of alcohol and 62 of glycerin, have been used for granular and chronic conjunctivitis with good results; and a solution of iodol 1, alcohol 3, glycerin 21, as a pigment in diphtheria. Also iodol 2, menthol 1, almond oil 96, for throat spray or pigment.

'**Collapsubes**' with catheter attachment (*v.p.*217) of iodol ointment 5, with eucalyptus oil 10 per cent., with soft petroleum basis are useful for urethral medication in the treatment of gonorrhœa and allied disorders.

Iodomenthol. One per cent. of menthol covers odour of iodol, and is said to render it more active.

Hard and soft chancres and varicose ulcers much improve under its use.

Loretin. META-IODO-ORTHO - OXY - CHINOLIN - ANA-SULPHONIC ACID.

A yellowish crystalline powder, very slightly soluble in water and alcohol, an iodoform substitute for burns, ulcers, and other wounds.

Losophan. META-TRI-IODO-CRESOL.

A greyish crystalline powder, soluble in alcohol, chloroform, oils, and fats. Contains 80 per cent. of iodine. Lotion, 1 or 2 per cent. in diluted alcohol has been found useful in parasitic skin affections.

Nosophen.—TETRAIODOPHENOLPHTHALEIN.

Dose.—3 to 8 grains 0·2 to 0·52 Gm.).

A cream-coloured insoluble powder, containing 60 per cent. of iodine. Used as a dusting powder, and as an insufflation in coryza and rhinitis.

Antinosin.—The sodium salt of tetraiodophenolphthalein.

Dose.—3 to 8 grains (0·2 to 0·52 Gm.).

A soluble blue powder; as an antiseptic for throat affections, and for irrigation in cystitis.

Eudoxin.—The bismuth salt of tetraiodophenolphthalein above.

Dose.—3 to 8 grains (0·2 to 0·52 Gm.).

A reddish brown insoluble powder recommended for use internally in stomachic and intestinal affections.

Sozoiodol. DI-IODO-PARA-PHENOLSULPHONIC ACID, which contains 54 per cent. of iodine, 7 per cent. of sulphur, and 20 per cent. of phenol, has been combined with **Sodium, Potassium, Calcium, Mercury,** and **Zinc,** to form salts which have been suggested as odourless substitutes for iodoform.

The first mentioned is soluble 1 in 14 of water. It has been given internally in doses of 22 grains three times day, and is well tolerated as an external application.

Sozoiodol-Mercury is an orange-yellow powder, and solution of 2½ grains with Sodium Iodide 5 grains, in 00 minims, has been given in 10 to 15-minim doses or intramuscular injection in syphilis.

Iodine is contained in these preparations in the following proportions:—

Iodoform ...	... 381 in 394	or about 29 in 30
Iodol ...	... 508 „ 571	„ 9 „ 10
Losophan...	... 80 „ 100	„ 8 „ 10
Sozoiodol ...	... 54 „ 100	„ 1 „ 2
Aristol ...	... 45·8 „ 100	„ 1 „ 2
Europhen ...	... 28 „ 100	„ 2 „ 7

Traumatol, an Iodo-Cresol compound.

A greyish amorphous powder, used as a non toxic antiseptic. A **Liquid** preparation is also made.

IODUM (*Off.*).

The following medicinal inorganic iodides contain the halogen in these proportions:—Ammonium Iodide 87·6 per cent., Lithium Iodide (Anhydrous) 94·8 per cent., Potassium Iodide 76·51 per cent. Rubidium Iodide 42·37 per cent., Sodium Iodide 68·28 per cent., Strontium Iodide (+ 6 H_2 O) 56·5 per cent.

Antidotes. Stomach Pump, Emetics, Apomorphine Injection, Starch, Saccharated Solution of Lime, Demulcents followed by stimulants. Finally opiates.

It has been seriously discussed whether a tolerance of Iodine is not a proof of the existence of constitutional syphilis.—Th. Gaz. Dec. 1888,802.

Skin rash due to Iodine may resemble variola.—L. i./04,421.

Iodine one of the best disinfectants.—Asclepiad,xi.157.

Tinctura Iodinei, P.Ed. 1 grain Iodine to 16 minims of Rectified Spirit. For external use, and is preferred as an injection for hydrocele and for dry inhalation; it is not miscible with water.

Glycerinum Iodi.

Iodine 1, Glycerin 50. Heat carefully till dissolved, —is not a mere solution, some decomposition of glycerin takes place. It forms a useful pigment, the skin does not get hardened by its repeated application, and does not peel off.

Glycerinum Iodi, G.H., is *Morton's Fluid sine* Water, *v.p.*319.

Injectio Iodi Hypodermica Fortissima. Iodine 360 grains, Potassium Iodide 360 grains, Distilled Water 4½ drachms. Should measure exactly 1 ounce and contain $\frac{3}{4}$ grain free Iodine in each minim. *Dose.* —3 to 5 minims for fibrous bronchocele.

A grain of Iodine may be held in solution in a minim of fluid, by employing sodium iodide in the proportion of Iodine 3, sodium iodide 2, and water *q.s.* to form 3 volumes.

Iodo-Glycerin Solution. Injectio Iodi, C. L. T. E. *Morton's Fluid.*

Iodine 10 grains, Potassium Iodide 30 grains, Water 25 minims, dissolve and add Glycerin to 1 ounce.

In spina bifida about 30 minims have been injected into the tumour, and have also been injected into the parenchyma of a soft solid goitre.

Iodinoleum, Iodinol.—*Syn.* IODIPIN. 25 and 10 per cent., analagous to Brominol (*v.p.*127.)

Dose.—2 to 3 drachms daily of the 25 per cent. = bout 20 to 30 grains of Potassium Iodide.

Capsules contain 2 grammes of the 25 per cent. = about 9 grains of potassium iodide.

They are additive compounds of Iodine and Sesame Oil, readily absorbed and easily assimilated. The weaker s recommended for use internally. The 25 per cent. is used externally and subcutaneously.

The compound may be prepared similarly to Brominol by epeated iodization of Sesame Oil by means of Iodine-Monohloride in alcoholic solution. The preparation is a thick ellow oil, odourless and of oily taste (hence the capsule method of administration is usually preferred). The iodine s said to be rapidly absorbed into the system inasmuch as it an be detected in the urine within 10 minutes after a dose; similar compound with 40 per cent. of Iodine has been made with Poppy Seed Oil.—P.J. ii./01,65.

Iodinol may be given in beer, wine, milk, shaken with yrup or emulsified as follows:—Iodinol 25 per cent. ounces, Gum Acacia 1 ounce, Chloroform 24 drops, ub together and add quickly with vigorous agitation Water *q.s.* to 6 ounces. Dose of 2 drachms = about grains potassium iodide.

Scrofulosis, convulsions of children, tuberculous nduration of the larynx, pleuritic induration, facial aralysis, and syphilis have been treated by internal and ocal use. In actinomycosis markedly good results have been produced by Iodinol and Potassium Iodide, and it has been found useful instilled for eye affections.

Uterine fibroids treated with injections.—L.i./03,958.

Syphilitic disease of the nervous system, treatment by Potassium Iodide or Iodinol and Mercury The two former can be administered in almost any quantity. Mercury can only be gradually introduced. They are equally useful but mercury (in the form of oleate *q.v.*) is more powerful where there is inflammation. Potassium Iodide in 40 grain doses, thrice daily, was given as far back as 1847. Iodide or Iodinol should be given after the mercury treatment for 3 or 4 weeks, every 4 or 6 months; for 3 or 4 years.—Gowers; B.M.J. i./03,773.

Iodum Oleatum.

An Iodine-Oleic Acid compound containing 10 per cent. of Iodine. When thoroughly rubbed into any part does not stain the skin, but is rapidly absorbed, and its specific effect is soon apparent.

Liquor Iodi (**B.P.** 1885).—*Syn.* LUGOL'S SOLUTION. Iodine 2, Potassium Iodide 3, Water 40.

Liquor Iodi Dilutus, U.C.H. Iodine 22 grains, Potassium Iodide 33 grains, Water to 1 ounce.

Liquor Iodi Fortis, Strong Solution of Iodine (*Off.*).—*Syn.* LINIMENTUM IODI (B.P. 1885).

Iodine 5, Potassium Iodide 3, Distilled Water 5. Dissolve and add Alcohol (90 per cent.) 36.

Pigmentum Iodi, U.C.H., Mid.H.

Tincture of Iodine 1, Strong Solution of Iodine 1.

St. Th. H. has Iodine 100 grains, Potassium Iodide 100 grains, to water 1 ounce.

Pigmentum Iodi et Aconiti, K.C.H. Tincture of Iodine 1, Tincture of Aconite (Fleming's) 1.

Pigmentum Iodi Æthereale.

Iodine ½, Alcohol 90 per cent. 3, Methylated Ether 2½. Has the advantage of drying rapidly.

Pigmentum Iodi et Olei Picis, Mid. H.

Syn (as Pasta Iodi et Picis) Coster's Paste.

Iodine 1, Light Oil of Wood Tar 4.

Mix carefully, applying heat if necessary; after ebullition preserve for use. Ebullition generally takes place by the chemical action between the two ingredients, a part of the oil is oxidised and forms a resinous deposit. Hydriodic acid is probably formed to some extent, as the mixture fails to give any reaction of free Iodine.

Similar, but more irritating, applications are made by combining Iodine with creosote or *huile de cade* in the same proportions as above.

Coster's Paste is a useful application for ringworm of the scalp; after well shaking the bottle, it should be well brushed in with a stiff brush; a scab will be produced which should be removed in a few days, the part cleansed by soaking with oil, and then soap and warm water; after drying, more paste should be applied. It seldom causes pain.

Iodine, Chloral Hydrate, and Carbolic Acid, equal parts, recommended for ringworm.—Pr. xlix.459.

Pigmentum Mandl, T.H.

Iodine 6 grains, Potassium Iodide 20 grains, Oil of Peppermint 5 minims, Glycerin to 1 ounce. Use, throat stimulant.

Syrupus Iodo-Tannicus.

Dose.—½ to 2 drachms (1·8 to 7·0 Cc.), containing 1 to 4 grains of Iodine, in water or wine.

Iodine 2½ Gm., Tannic Acid 4 Gm., Alcohol 90 per cent. 38 Cc., Syrup (with flavourings and carminatives) *q.s.* to 75 Cc.

Dissolve the Iodine in the Alcohol, add the Tannic Acid and 30 Cc. of Syrup, heat until no indication of free Iodine with starch, cool and add the other ingredients.

This contains the Iodine in loose chemical combination and to a great extent in the form of Hydriodic Acid.

It has been found of great value for enlarged glands in children and also as a tonic after removal of tonsils and adenoids.

Specially useful in cases of chronic lymphadenitis associated with or independent of adenoids. In atrophic rhinitis has given good results especially when combined with arsenic, and in simple bronchocele supplemented by the external use of Iodine Oleate (*v.p.*320).—B.M.J. ./04,724; L. i./04,994.

The combination of Iodine and Tannin discussed.—P.J. ii./01,147,173; i./02,193.

Tinctura Iodi (*Off.*). *Dose* (for vomiting).—2 to 5 minims (0·12 to 0·3 Cc.).

Iodine 1, Potassium Iodide 1, Distilled Water 1; dissolve, add Alcohol (90 per cent.) *q.s.* to 40.

C. U. D. proposes 10 per cent. strength with alcohol, 95 per cent. This is more in accord with several foreign pharmacopœias.

Tinctura Iodi Ætherea.

Iodine 1, Pure Ether 40.

Tinctura Iodi Decolorata, B.P.C.

Iodine	250 grains.
Rectified Spirit	5½ ounces.

Dissolve with a gentle heat, and add when cold

Strong Solution of Ammonia 10 drachms.

Keep the mixture in a warm place until decolorised, after which dilute it with (about 2 to 1 is required)

Rectified Spirit ... *q.s.* to 1 pint.

Mix. It forms a useful application for chilblains and painting on exposed affected parts. Some iodoform is formed in solution.

Tinctura Iodi Oleosa.

Iodine 1, Alcohol (90 per cent.) 9; heat to dissolve, and add Castor Oil 2. Repeatedly applied as a pigment, it does not crack the skin, as the tincture does.

Unguentum Iodi (*Off.*).

Iodine 1, Potassium Iodide 1, Glycerin (by weight) 3; dissolve, and add Lard 20.

Amyli Iodidum.

Syn. AMYLUM IODATUM; IODIZED STARCH.

Iodine 1, Distilled Water *q.s.* to moisten. Triturate and add gradually Wheat Starch in powder 20. Continue the trituration until it assumes a deep and uniform colour, and dry under 104° F.

Dose.—½ to 4 drachms (2 to 16 Gm.), in water, water gruel, or arrowroot with water. As a local application, is said to be as valuable as iodoform.

This is a mild form of administering Iodine in very weak combination for syphilis and other diseases, the dose is pushed until free Iodine can be detected in the urine. It is recommended as an antidote when poison is unknown, *e.g.*, for sulphuretted hydrogen, the alkaloids, alkaline sulphides, caustic alkalis, and ammonia.

In lupus erythematodes, doses of 1 to 4 teaspoonfuls three times a day have been found very successful.

Pasta Iodi et Amyli, U.C.H.

Starch, in powder, 1, Glycerin 2, Water 6; boil, and when nearly cold add Dilute Solution of Iodine U.C.H. 1.

Mix well. Useful to cleanse and heal foul sores, especially such as are syphilitic.—Tilbury Fox. It rapidly heals syphilitic ulcers, especially those of the face; if applied on lint during the night, the sores may be hidden with calamine lotion during the day.

Iodalbacid.

Dose.—15 grains (**1 Gm**).

A brown powder, tasteless and odourless albuminous compound; said to contain 10 per cent. of Iodine. Has been given for epilepsy and syphilis; is suitable for prolonged administration.

Pilula Potassii Iodidi.—Contains 1 grain or more.

Potassium Iodide 1 grain, Sodium Carbonate, Exsiccated ⅛ grain with Tragacanth and Syrup.

Acidum Hydriodicum.

Dose.—5 to 10 minims (**0·3 to 0·6 Cc.**) in syrup.

A colourless, sour liquid, which becomes dark in colour on exposure to light; it has sp. gr. 1085, and contains about 12 per cent. of Hydrogen Iodide.

Syrupus Acidi Hydriodici, U.S., and B.P.C.

Dose.—20 to 60 minims (**1·2 to 3·5 Cc.**), well diluted.

Dissolve Potassium Iodide 152 grains, and Potassium Hypophosphite 12 grains, in Distilled Water 200 minims; and Tartaric Acid 140 grains, in Alcohol (60 per cent.) 5 drachms; mix thoroughly, place in ice-water for half-an-hour, shaking occasionally; filter, and wash the filter with Alcohol (60 per cent.) until the filtrate gives but a faint cloudiness with silver nitrate. Then evaporate the filtrate over a water-bath to 600 grains, and when cold, add syrup to 1 pint. Contains 1 per cent. by weight of hydriodic acid. Is a mild preparation of Iodine.

Gardner's Syrup contains about 1¼ per cent. of Hydrogen Iodide. Dose 1 to 3 fluid drachms in water.

Acidum Iodicum.

Dose.—1½ to 3 grains (**0·1 to 0·2 Gm.**)

A white crystalline powder, soluble in water; as a substitute for alkaline iodides. Is used made up into hard and soft rods in ophthalmic practice. Sodium Iodate in 5 per cent. solution is used by subcutaneous injection for acute and chronic articular rheumatism.—P.J. i./01, 666.

Vapor Iodi Ætherealis.

Iodine 3 grains, Ether 2 drachms, Carbolic Acid 2 drachms, Creosote 1 drachm, Rectified Spirit 3 drachms. Ten minims to be dropped on the respirator for dry inhalation. Thymol may be substituted for creosote.

IPECACUANHA (*Off.*).

Dose.—As an expectorant, ¼ to 2 grains (0·016 to 0·13 Gm.), as an emetic 15 to 30 grains (1 to 2 Gm.).

The dried root of *Psychotria Ipecacuanha* from Rio Janeiro; another variety is known in commerce as Carthagena Ipecacuanha. It is thicker, the annulations less marked (taking the form of narrow merging ridges) and its starch-grains are somewhat larger; this is less expensive.

Ipecacuanha induces energetic uterine action in first or second stage of labour; 2 or 3 doses of 10 to 15 minims of the wine at intervals of a few minutes.—B.M.J. ii./90,1295.

Good reaction of doses of 20 grains in dysentery when acute, in strong persons.—L. ii.,98,52.

Methods of assaying with results: Brazilian, alkaloidal content about 2·2 per cent., Carthagena about 2·0 per cent.—P.J. i./03,425.

Emetine constitutes 72 per cent. of the total alkaloid in the Brazilian root, Cephaëline 26, and Psychotrine the remaining 2 per cent.—Ph.

In the Carthagena the proportions are reversed, namely, an average of 57 of Cephaëline and 40 of Emetine.

Assay and identification of the powdered root.—P.J. ii./03,73,101.

Colour reactions of the alkaloids similar to those of morphine.—Y.B.P. 1903,96.

The root bark only to be powdered, rejecting the woody portion. The powder should have an alkaloidal strength of 2 per cent.—C.U.D. As pointed out in B.M.J. i./03,29, the alkaloidal content does not vary very much.

Tablets of Ipecacuanha Powder contain $\frac{1}{20}$, $\frac{1}{10}$, $\frac{1}{4}$ and 5 grains.

Pulvis Ipecacuanhæ sine Emetina (Ipecacuanha from which the emetine has been extracted) acts equally well, it is said, for dysentery, without causing vomiting. Is not generally entirely free from alkaloids but contains Ipecacuanhic Acid. *Dose.* —5 to 20 grains (0·32 to 1·3 Gm.) Pr.1.411; M.C. Aug. 93,338.

Chronic dysentery cured in 24 hours by 10-grain doses.—B.M.J. i./98,1056.

Acetum Ipecacuanhæ (*Off.*).

Dose.—5 to 30 minims (0·3 to 1·8 Cc.).

Liquid Extract of Ipecacuanha 1, Alcohol (90 per cent.) 2, Diluted Acetic Acid *q.s.* to 20. Alkaloidal content is about 0.1 per cent.

Ethyl Acetate may be formed in this preparation, as it is an aceto-alcoholic solution of the active principles. The advisability of employing the acid is questioned.

Under the name of

Acetracts, Acetic extracts of Ipecacuanha, Cinchona, Colchicum Seed and other drugs have been prepared, and have been suggested to replace alcoholic preparations.

The acidity of these preparations is, however, a slight disadvantage, as they would be frequently incompatible in dispensing.

Extractum Ipecacuanhæ Liquidum (*Off.*).

Dose.—As an expectorant, $\frac{1}{2}$ to 2 minims (0·03 to 0·12 Cc.); as an emetic, 15 to 20 minims (0·9 to 1·2 Cc.).

Ipecacuanha in No. 20 powder is percolated with 90 per cent. alcohol, and the marc mixed with calcium hydroxide and further percolated; the percolate is finally adjusted in strength to contain 2 to 2·25 per cent. of alkaloid. 1 = about 1 of root. Keeps indifferently.

An **Elixir** has been made with Liquid Extract 1, Alcohol 90 per cent. 1, Glycerin 5, water to 20; may be dispensed with alkalies; strength same as Vinum Ipecacuanhæ. *Off.* *Dose.*—As expectorant, 10 to 30 m.

Linctus Ipecacuanhæ. St. Th. H. has Acetum Ipecac., Syrupus Tolutanus, Glycerin and Mucilage of Tragacanth equal parts. *Dose.*—1 drachm (3·5 Cc.).

Pulvis Ipecacuanhæ Compositus. *Syn.*—DOVER'S POWDER. (*Off.*).

Dose.—5 to 15 grains (0·32 to 1 Gm.).

Ipecacuanha 1, Opium 1, Potassium Sulphate 8.

Should contain 10 per cent. of Pulvis Opii.—C.U.D.

Tablets of Dover's Powder, 5 grains (0·32 Gm.).

Dose. 1 to 3.

Tinctura Ipecacuanhæ et Opii. U.S.

Dose.—10 minims (0·6 Cc.). Equal to Opium 1 grain and Ipecacuanha 1 grain.

Represents Dover's Powder in liquid form.

Pilula Ipecacuanhæ cum Scilla.

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

Compound Powder of Ipecacuanha 3, Squill 1, Ammoniacum 1, Syrup of Glucose *q.s.*

Syrupus Ipecacuanhæ Aceticus, B.P.C.

Dose.—¼ to 2 drachms (0·9 to 7 Cc.).

Vinegar of Ipecacuanha 1 pint, Refined Sugar 2¼ pounds. Dissolve by gentle heat. Sp. Gr. about 1·33.

Should be 10 per cent. of the C.U.D. tincture below in syrup.—C.U.D.

Tinctura Ipecacuanhæ. Should be 10 per cent. strength, prepared by percolation with Alcohol 70 per cent.—C.U.D.

Vinum Ipecacuanhæ (*Off.*).

Dose.—As an expectorant, 10 to 30 minims (0·6 to 1·8 Cc.); as an emetic, 4 to 6 drachms (15 to 22 Cc.).

Liquid Extract of Ipecacuanha 1, Sherry 19. After 48 hours, filter.

Is better prepared with detannated wine.

Emetine.—*Syn.* EMETIA.

A mixture of alkaloids, an amorphous mass, soluble in alcohol and dilute acids. Is a powerful emetic and depressant, and is given in doses of $\frac{1}{100}$ to $\frac{1}{25}$ grain as an expectorant, ⅛ to ⅜ grain as an emetic.

The pharmacology of ipecacuanha alkaloids.—L. ii./95, 1274; P.J. ii./95,435; L. ii./02,654; B.M.J.E. i./03,83.

Pure Emetine is white and amorphous, soluble in ether, alcohol, and chloroform, insoluble in caustic alkaline solutions; rapidly darkening in colour on exposure, and forming crystalline salts of which the **Hydrochloride** and **Hydrobromide** (*Dose* $\frac{1}{100}$ to $\frac{1}{25}$ grain [0.00065 to 0·0026 Gm.] as an expectorant) are freely soluble in water.

Of the Hydrochloride 1 gr. in 8 ounces of Sherry forms **Vinum Emetinæ**, equivalent to Ipecacuanha Wine. *Dose.*—5 to 40 minims (0·3 to 2·4 Cc.).

Cephaëline is a crystalline alkaloid less soluble in ether than emetine, but soluble in caustic alkaline solutions, and also darkens on exposure.

The expectorant and emetic properties of **cephaëline** and **emetine** only result when administered *per os*. The former is the more powerful emetic, and the latter the best expectorant, but is strongly emetic in large doses.

Dose.—A solution of **emetine hydrobromide** 1 grain to the ounce in 20 per cent. alcohol is employed. Of this, for adults 5 to 20 minims as expectorant and depressant, and 1 to 3 drachms as an emetic.—M.A. 1904,24.

Emetin—Extractive.

Dose.—Expectorant $\frac{1}{15}$ to $\frac{1}{10}$ (0·0043 to 0·0065 Gm.), emetic ½ to 1 grain (0·032 to 0·065 Gm.), in pill or solution. An extractive substance, soluble in water; must be distinguished from Emetine.

Trochisci Ipecacuanhæ.—¼ grain (0·016 Gm.) in each, with Fruit Basis. (*Off.*).

Trochisci Morphinæ et Emetin (TROCHISCI TUSSIS) contain $\frac{1}{40}$ grain of Morphine and $\frac{1}{80}$ grain of Emetin in each.

Trochisci Morphinæ et Ipecacuanhæ have $\frac{1}{12}$ grain (0·0054 Gm.) in each, with Tolu Basis.

Emetin is an emetic by reflex action, reduces the respiration and circulation, and it combats the convulsions caused by strychnine. Its action seems to be limited to the peripheric extremities of the vagus nerve.

Unguentum Ipecacuanhæ et Crotonis.—Sawyer. Pulvis Ipecacuanhæ 4 drachms, Linimentum Crotonis 4 drachms, Adeps Benzoatus 1 ounce. A powerful counter-irritant, rubbed on skin of epigastrium relieves gastralgia.

IRIDIN. B.P.C.

Dose.—1 to 3 grains (0·065 to 0·32 Gm.), in a pill with glycerin of tragacanth or extract of henbane.

The powdered extract of a dark brown colour obtained by means of Alcohol 60% from the root of the blue flag, *Iris versicolor*, has a bitter, acrid taste, possesses cathartic, alterative, and diuretic properties, given in hepatic and intestinal disorders.

Pilula Iridin.—Iridin 2 grains, Extract of Henbane *q.s.*, or combined with one grain of euonymin; useful for biliousness.

JABORANDI FOLIA (*Off.*).

Syn. PILOCARPI FOLIA.

Dose.—5 to 60 grains (0·32 to 4 Gm.)of the powder.

The dried leaflets of a rutaceous shrub, diagnosed by Mr. E. M. Holmes as *Pilocarpus Jaborandi*, imported from Brazil, principally from Pernambuco. The leaflets of *P. Selloanus* are also imported from Rio de Janeiro under the same name, but are much less active. Jaborandi was introduced into Britain by the late W. Martindale. True Jaborandi is a powerful sudorific and sialogogue; after a time a large dose acts as an emetic, contracts the pupil of the eye, and causes the approximation of vision. These properties are principally due to an alkaloid **Pilocarpine** contained in it. For other constituents, *v.p.*330.

Possessing such marked physiological properties, Jaborandi has been used in a great variety of diseases, most successfully in asthma, diabetes, and as an antidote to belladonna poisoning. Children proportionately are not affected by the drug so much as adults. Description and physiological action (on the writer).—P.J. 1874,364. According to *F. Ital.* should contain $\frac{1}{2}$ to 1 per cent. of pilocarpine; of late inferior sorts have not yielded above $\frac{1}{10}$ per cent.

Antidotes to Jaborandi, Pilocarpine and their preparations:—

After evacuating the stomach, give Tannic or Gallic Acid, then Atropine Sulphate or Tincture of Belladonna.

P. Selloanus and P. Microphyllus are the leaves of commerce.—P.J. i./00,8; or the latter only.—P.J. i./04,54; another variety is P. trachylophus.

On the constitution of Pilocarpine.—P.J. i./01,798.

Extractum Jaborandi (Hydro-Alcoholic). B.P. 1885.

Dose.—2 to 10 grains (0·13 to 0·65 Gm.), in pills.

Extractum Jaborandi Liquidum (*Off.*). **Liquor** Jaborandi. 1 = 1 of leaves; in 45% Alcohol.

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Tinctura Jaborandi (*Off.*). 1 in 5 of 45% Alcohol.

Dose.—30 to 60 minims (1·8 to 3·5 Cc.).

The sweating and salivation from a full dose of Jaborandi or Pilocarpine persist from 2 to 4 or 5 hours, the symptoms come on in about 10 minutes after taking the dose if external conditions are favourable. Hypodermically the alkaloid acts in 3 to 5 minutes. A reduction of temperature on an average of 0·9° occurs under the influence of the drug. The face flushes first and then pales; it causes contraction of the pupil, tension of accommodation with approximation of the nearest and farthest points of distinct vision, and amblyopic impairment of vision from diminished sensibility of the retina. These effects do not last long. It s slightly narcotic, sometimes causes sickness in large doses, promotes secretion of milk and is antagonistic to atropine.

Pilocarpina, Pilocarpine.

The pure alkaloid is a colourless syrupy liquid. Has been synthetically prepared from pyridine.

Pilocarpinum Hydrochloricum, P.G.iv.

Dose.—$\frac{1}{20}$ to $\frac{1}{3}$ grain (0·0032 to 0·02 Gm.) by mouth or $\frac{1}{10}$ to $\frac{1}{3}$ grain (0·0065 to 0·02 Gm.) hypodermically. In minute granular snow-white crystals, lightly deliquescent and very soluble in water. Melts at 204–205°C.—Jour. Chem. Soc. 1900,477.

In pneumonia 20 drops of 1 per cent. solution on ugar or in water have been given.

Hypodermic Tablets contain $\frac{1}{6}$ grain.

Pilocarpinæ Nitras, Pilocarpine Nitrate (*Off.*).

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.).

In minute white granular snow-like crystals, but may e obtained in large white prismatic crystals. Soluble in 8·2 of water, but very slightly in cold alcohol. This salt, preferred in England, was the first pure reparation of Pilocarpine prepared, and obtained by he late W. Martindale from an alcoholic solution.

It is principally now obtained from *Pilocarpus Microphyllus* (Maranham Jaborandi).—P J. i /04,54.

Pure Pilocarpine Nitrate melts at 177–178° C.; a 2 per cent. aqueous solution rotates $[\alpha]_D = +82{\cdot}2°$ C.; Pilocarpidine Nitrate (Isopilocarpine,—Jowett) melts at 159°C., its solution rotates $[\alpha]_D = +38{\cdot}5°$ C.—P.J. i./97,466; i./04,54.

Jowett states that **Isopilocarpine** is an isomeride and possible conversion product of Pilocarpine.—Trans. Chem. Soc., 1900,473. Ph. denies this and states that Pilocarpine can be converted into Pilocarpidine and Jaborine by chemical agents—the alkaloid Pilocarpine together with small quantities of pilocarpidine (found in Pernambuco Jaborandi only) and Isopilocarpine constitute the 0·5 to 1 per cent. of amorphous alkaloid in the leaves.

Isopilocarpine possesses only about one-tenth the salivating and sudorific action of Pilocarpine.—B.M.J. ii./00,1074; P.J. ii./00,464; i./04,54.

Both Pilocarpine and Choline (the principle of lecithin) contain a trimethylamine group; choline also increases salivation. The effect is attributed to the group in question. Comptes Rendues.—1902, i. No. 25,1522, and 1902, ii. No. 1, 52.

Guttæ Pilocarpinæ, R.O.H. Nitrate 0·5 in 100.

Used like Physostigmine to contract the pupil.

'**Sterules**' (*vide p.* 487) of Pilocarpine Nitrate Solution 2 grains to the ounce of water are prepared.

Injectio Pilocarpinæ Nitratis Hypodermica. R.O.H and T.H. *Dose.*—2 to 6 minims.

Pilocarpine Nitrate 1, Distilled water 20.

G. H. has 1 grain in 12 minims, with following directions:—"To prepare the patient for the injection remove the night-shirt, wrap him closely in a warm blanket, and cover him with two more blankets. Put hot water bottles to his feet, and give him hot drinks freely. After the sweating has ceased, remove the blankets gradually, dry the skin thoroughly, and leave him between warm dry blankets."

Tablets for administration *per os* contain $\frac{1}{10}$ and $\frac{1}{6}$ grain.

Hypodermic Tablets, $\frac{1}{10}$, $\frac{1}{8}$, $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{2}$ grain (0·0065, 0·008, 0·01, 0·016, 0·02 and 0·032 Gm.).

phthalmic discs $\frac{1}{500}$ grain, combined with gelatin.

otio Pilocarpinæ, for the hair.

Pilocarpine Nitrate 2 grains, Quinine Hydrohloride 8 grains, Glycerin 2 drachms, Rose Water drachms. Applied locally, and used internally or ypodermically, Pilocarpine seems to have an action in romoting the growth of hair in alopecia. Used also in **intment**, 4 grains to the ounce of a mixture of wool t and soft paraffin ointment.

ilula Pilocarpinæ Nitratis.

Pilocarpine Nitrate $\frac{1}{20}$ grain (0·0032 Gm.) with ilk sugar.

ilocarpinæ Phenas.

A colourless oily liquid, soluble in water and alcohol. 1 tuberculosis and in malaria 4 Cc. of a 0·02 per cent. olution have been injected subcutaneously.

ilocarpinæ Salicylas, Pilocarpine Salicylate.

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain (0·0032 to 0·032 Gm.).

In small colourless tabular crystals or white crystalne powder, with bitter taste, easily soluble in water.

The salts of pilocarpine possess all the before-mentioned roperties of jaborandi in a marked degree; applied pically, they contract the pupil of the eye. Pilocarpine is tagonistic to atropine, and a complete **antidote** to isoning by it and by morphine. It promotes the owth of the hair in alopecia. Large doses are powerlly diaphoretic, small ones ($\frac{1}{20}$ grain) check night eating of phthisis—does not over-dry the skin.

In intermittent fever $\frac{1}{7}$ to $\frac{1}{5}$ grain of nitrate promptly ts short the chill, produces sweating, and avoids hot age.

It is useful in nephritis and albuminuria, it assists ins of labour, but will not originate them, diminishes ine in diabetes and has an action similar to physogmine but less irritating, in diseases of the eye. It creases flow of milk.

In skin diseases where the secretion of sweat is more less altered, $\frac{1}{6}$ grain hypodermically twice a day has n found useful in prurigo, urticaria, and some cases of pecia.

In asthma, doses of $\frac{1}{5}$ to $\frac{1}{3}$ grain of the hydrochloride, podermically, given systematically at intervals, are very viceable.—B.M.J. i./80,917,960.

Puerperal convulsions treated by injection of Pilocarpine, pains became stronger, fœtus expelled, and rapid recovery.—B.M.J. i./81,511; L. ii./86,1019.

Traumatic tetanus, 3 cases cured.—B.M.J. i./86, 1276; Ed. M.J. 1887,848.

Politzer recommends its use in syphilitic disease of the labyrinth, but cautions against its abuse.—L.i./91,11; Pr. xlvi.457; B.M.J. ii./90,86.

Successful use in deafness.—L. ii./93,956; B.M.J. i./93,407.

Relieves itching of jaundice, and assists passage of gallstones.—Pr.xlii.210; B.M.J.i./89,119; L.i./89,1157.

Useful in uræmia, $\frac{1}{6}$ grain doses to induce profuse diaphoresis.—B.M.J. ii./90,391; Pr. xlv.464.

Poisoning by 4 grains treated by atropine.—B.M.J.E. ii./91,157; P.J. 1891,454.

Of great use in chronic thickening of the skin, chronic eczema and prurigo senilis, useless in psoriasis and subacute eczema.—B.M.J. i./92,265.

Pneumonia treated by hypodermic injections of $\frac{1}{10}$ grain and more.—L. ii./03,342,424.

Case of uræmic puerperal eclampsia cured by pilocarpine.—B.M.J. ii./90,748.

Given in Bright's disease to cause sweating.—L. ii./03,342.

JALAPA *(Off.)*.

Jalap. *Dose.*—5 to 20 grains (0·32 to 1·3 Gm.).
The dried tubercles of *Ipomœa Purga*.

Extractum Jalapæ (*Off.*) Hydro-alcoholic.
Dose.—2 to 8 grains (0·13 to 0·52 Gm.).

Jalapæ Resina (*Off.*) and P.G.
Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

This contains Mayer's two glucosidal resins, about 90 per cent. **Convolvulin**, soluble in alcohol and insoluble in ether, with his **Jalapin** about 10 per cent. (**Orizabin** of Flückiger), soluble in ether and in alcohol. The latter, the principal constituent of spurious Jalap (*Ipomœa simulans* and *I. orizabensis*), is identical with **Scammonin** (*dose*, 1 to 5 grains) from scammony root

The average yield of resin from the root is 8 per cent The B.P. requirement of 9 to 11 is rather high.—P.J. i./04,5.

Jalapin of British makers (*dose*, 1 to 5 grains) onsists principally of Convolvulin and the best is bout 90 per cent., soluble in alcohol, in whitish morphous powder (the Jalapurgin of Maisch and Flückiger), obtained from true Jalap; unfortunately Mayer's Jalapin (Orizabin, *dose*, 2 to 6 grains), eing cheaper, has tended to replace it, but is a less ctive purgative. The official resin is said to be more ctive than either. - P.J. 1892,1079,20,86.

Sapo Jalapinus, P.G. *Dose.*—2 to 6 grains (0·13 to 0·4 Gm.). Jalap Resin 4, Medicinal Soap 4, Alcohol 8. Dissolve and evaporate to 9.

Pilula Jalapæ, P.G. Jalap Soap 3, Jalap in powder 1. In pills of 0·1 gramme each ($1\frac{1}{2}$ grains). *Dose.*—1 to 3.

Pulvis Jalapæ Compositus (*Off.*). *Dose.*—20 to 60 grains (1·3 to 4 Gm.).

inctura Jalapæ (*Off.*). *Dose.*—$\frac{1}{2}$ to 1 drachm (1·8 to 3·5 Cc.). About 1 in 5 of Alcohol (70 per cent.). Standardised to contain 1·5 per cent. of Resin.

inctura Jalapæ Composita, I.C. Add., *v.p.*xxiii. *Dose.*—30 to 60 minims (1·8 to 3·5 Cc.) Jalap 8, Scammony 2, Turpeth Root 1, percolate with lcohol (60 per cent.) *q.s.* to 100.

JAMBUL.

Dose, in cachets, 5 to 30 grains (0·32 to 2 Gm.), creased.

The seeds of *Eugenia Jambolana* (*Syzygium mbolanum*), also known in India as **Jamun**, have een used in cases of diabetes; they check the conversion starch into sugar and contain a glucoside Antimellin. dministered in powder, or in pills or cachets.—Pr.xl. 50; xli.416.

xtractum Jambul Liquidum. 1 = 1 of seeds. *Dose.*—$\frac{1}{2}$ to 2 drachms (1·8 to 7 Cc.).

It is said to be contained in a preparation called iabene.—B.M.J. i./04,708.

Recommended by Therapeutic Committee of the M.A. for diabetes in doses of 1 drachm to 1 ounce fresh powder daily, with requisite modifications of et.—B.M.J. ii./91,1284.

Acted almost specifically in reducing amount of sugar present; advantageously combined with meat diet.—B.M.J.E. i./92,39.

Valuable even in advanced diabetes.—B.M.J.ii./01,618

KAOLINUM.

Kaolin (*Off.*). **Bolus Alba, P.G., P. Jap.**

Native white aluminium silicate, which has bee purified by elutriation from free silica and undecompose felspar; it is a pearly white powder, unctuous to th touch and free from grittiness. It forms a usefu absorbent powder to apply to infants and to irritate conditions of the skin generally. A special preparation agreeably perfumed, having similar chemical and physica properties, is sold under the name of Cimolite. Kaoli is unacted upon by most chemical reagents; it is, therefore, useful for diluting such salts as silver nitrate an potassium permanganate, either to form them int powders or into pills. It is useful for sprinkling on t the filter paper in clarifying liquids from suspende matter.

Unguentum Kaolin.

Soft Paraffin 1, Hard Paraffin 1; melt, add Kaolin 1 and stir till cold. Spread on rag to apply to abraded skin it allays irritation. It forms a useful excipient for nitrat of silver, permanganate or bichromate of potassium and gold and sodium chloride pills, *v.p.*113.

Absorbent Powders.—In addition to Kaolin th following are used medically :—

Compound Boracic Acid Powder, *v p.*6.

Dimatos. A light infusorial earth, consisting principally of silica.—P.J. ii./96,xl.

Emol. A siliceous product containing alumina, lim and steatite. Softens horny epidermis, relieve itching, and is a good dusting powder.

Fuller's Earth (China clay) is also a native aluminium silicate, with traces of iron, grey in colou when in powder.

Talc, a native foliaceous magnesium silicate; th obtained from the Tyrol—Venetian Talc—is very so and unctuous.

French Chalk, a harder silicate of magnesium than talc, forms a soft powder.

Selenite, a transparent variety of gypsum, native calcium sulphate reduced to powder, is soft and pearly.

Kieselguhr, a diatomaceous earth, known as white peat; when burnt produces an extremely light ash, which is very absorbent and antiseptic.

Oxide of Zinc, various **Starches**, powdered **Orris Root**, and mixtures of these, perfumed, are employed for toilet purposes; also **Zinc and Starch Powder**; **Boric Acid and Starch Powder**; **Boric Acid, Zinc and Starch Powder**.

alamina Præparata, B.P., 1885.

Syn. LAPIS CALAMINARIS PRÆPARATUS.

Impure zinc oxide prepared by calcining native Calamine (zinc carbonate) and reducing it to an impalpable owder; should be almost entirely soluble in diluted ulphuric acid, to which solution, when potash or mmonia is added in excess, the precipitate first formed re-dissolved. Genuine Calamine, on account of its hysical characters, when of a neutral skin tint, is referred to the other zinc powders, as a dusting powder, for making lotions, and may be mixed with Carmine riturate to produce the desired tint.

eratum Calaminæ, P.L.

Syn. TURNER'S CERATE.

Calamine and Yellow Wax, of each 15, Olive Oil 40. useful application to burns.

inimentum Calaminæ, G.H.

Prepared Calamine 20 grains, Zinc Oxide 15 grains, lution of Lime 2 drachms, Water 2 drachms, Olive il to 1 ounce.

inimentum Calaminæ, U.C.H.

Levigated Calamine 40 grains, Zinc Oxide 20 grains, nc Oleate 10 grains, Wool Fat 10 grains, Soft Paraffin drachms, Liquid Paraffin to 1 ounce.

otio Calaminæ, U.C.H.

Levigated Calamine 40 grains, Zinc Oxide 20 grains, ycerin 20 minims, Water (or Rose Water) to 1 ounce utriate the calamine and zinc oxide by triturating em in a mortar with successive portions of the water and decanting from the siliceous matter, and add the glycerin. Used in eczema, especially where the surface is red and tender, also to conceal acne spots on the face. One grain of mercuric chloride may be added to 6 ounces of it.

Unguentum Calaminæ, B.P. 1885.
Prepared Calamine 1, Benzoated Lard 5.

KINO (*Off.*)

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

The juice obtained from the trunk of *Pterocarpus Marsupium* evaporated to dryness. Dark reddish-brown fragments or powder. Odourless, bitter, and astringent. Partially soluble in cold water. It should be almost entirely soluble in alcohol 90 per cent. Powerfully astringent for diarrhœa, and as **Trochisci** for relaxed condition of the throat. Its powder is also insufflated to check epistaxis.

Tinctura Kino (*Off.*).—1 in 10 of a mixture of glycerin, alcohol, and water.

Dose.—30 to 60 minims.

This is prone to gelatinise, and the gelatinisation has been shown to be due to the presence of an enzyme in the drug. **A tincture that will not change** in this manner may be made by adding Kino 2 to boiling water 10, and keeping the mixture of 100° C. 12 hours. After cooling, alcohol 10 is added, the tincture set aside 12 hours and filtered. The enzyme is said to withstand a temperature of 90° C. Kino is one of the cheapest sources of Tannin.—P.J. ii./03,702; C. D. ii./03,800.

KRAMERIÆ RADIX.

Rhatany Root (*Off.*).

The dried root of *Krameria argentea* (Para), and *Krameria triandra* (Peruvian). Is much used for its astringent properties (*vide* Trochisci). Both contain about 8 per cent. of a tannin.

Extractum Krameriæ Fluidum, U.S.

Dose.—10 to 60 minims. Strength 1 = 1. Is of deep red colour and astringent taste. Yields a minimum of about 25 per cent. of extractive.

Tinctura Krameriæ (*Off.*). 1 in 5 of 60 per cent. alcohol by percolation process. *Dose.*—30 to 60 minims (**1·8 to 3·5 Cc.**). Should not contain less than 5 per cent. of extractive.—Umney.

Trochisci Krameriæ (*Off.*) are of fruit basis, and contain 1 grain of Extract; are also combined with Cocaine Hydrochloride $\frac{1}{20}$ grain (*Off.*).

Extractum Krameriæ (*Off.*). *Dose.*—5 to 15 grains (**0·32 to 1 Gm.**).

An aqueous extract of the root.

LANÆ ADEPS.

Wool Fat (*Off.*). **P.G.iv.** Anhydrous Lanolin.

The purified cholesterin fat of sheeps' wool. A yellowish, tenacious, unctuous substance, almost inodorous, melting from 104° F. to 112° F. Sheep's wool yields from 10 to 30 per cent. It is removed from the wool by treatment with water.

Method of examination.—C.D. i./03,720.

Adeps Lanæ Hydrosus. Hydrous Wool Fat (*Off.*), **P.G.** (with 75 per cent. of fat).

Commonly known as 'Lanolin.' Wool Fat 7, Distilled Water 3. Melt and mix.

Yellowish white, free from rancid odour. If heated the watery portion separates from an upper oily layer. More water may be incorporated with it without affecting its consistence. It is partially soluble in alcohol, while ether and chloroform dissolve only the fats it contains.

Originating from keratinous tissue, Wool Fat has affinity for, and is readily absorbed by, the skin. It causes no irritation, and is useful in massage. It helps absorption of narcotic extracts, quinine, iodine, potassium iodide, and chaulmoogra oil. Iodine appears in the urine in three minutes after friction. Washing the skin with ether facilitates its absorption. It is more readily absorbed in children than in adults. Useful combined with chrysarobin in psoriasis, ringworm, and tinea favosa, and with salicylic acid for eczema; or with mercury, as in

Lanolinum Hydrargyri.

Mercury 100, Lanolin 200, Mercurial Ointment 5 Mutton Suet 50. Is specially useful for inunction in

syphilis. The effect is much more rapid than that
Mercurial Ointment; should be used daily 4 to 8 time
after a hot bath.—M.P.C. ii./86,327; L. i./93,925.

Unguentum Hydrargyri, P. Aus. Add., *v.p.* 28
Mercury 200, Anhydrous Wool Fat 100, mix *s.a.*, an
add previously melted together and cooled, Suet 100 an
Lard 200.

Sapolanoline. Lanolin 5, Soft Soap 4.
Recommended for acne and eczema.

Unguentum Adipis Lanæ, P.G. iv.—Wool F
20, Water 5, Olive Oil 5.

Unguentum Lanolini, Lanolin Ointment.
Lanolin (hydrated) 2, Soft Paraffin or Vaseline
Mix. May be perfumed to form **Lanolin Crean**
These are much less sticky than Lanolin.

Equal parts of lanolin, lard and soft paraffin melt
together form a useful ointment basis.—P.J. i./01,694

Cholesterin is prepared from wool fat by sapon
fying the same with potash, and extracting t
cholesterin with ether.

LECITHIN, OVO-LECITHIN.

Choline Di-Stearo-Glycerophosphate.

Dose.—Internally 3 to 5 grains (0·2 to 0·3 Gm
per diem. Subcutaneously ¾ to 2 grains (0·05 to 0·
Gm.) in sterile olive oil, every second day.

A yellowish wax-like mass insoluble in water, solu
in 1 in 5 of ether, twice its weight of chloroform, a
1 in 30 of alcohol 90 per cent. This compound is
constituent of the brain, and of yolk of egg, is u
where the phosphates excreted by the urine are hi
Given in neurasthenia, various nervous diseases, diabe
tuberculosis, tabes and general paralysis; also in
diseases producing a disturbance of nutrition. It
said to cause a marked increase in patients' weight,
to improve the general well being: augments the bl
corpuscles. Rickets and marasmus have been successf
treated with lecithin, and intramuscular injections
Sterile Oil Solution have also given relief. Use sugge
in incipient tuberculosis, osteomalacia, and the like.

Lecithin should be entirely soluble in chloroform dicating absence of added mineral phosphates. The total phosphorus should be estimated.—Y.B.P. 1903.

Injection (ampullæ). *Dose*—1 Cc.

Tablets ⅓ grain (0·025 Gm.). Pills and granules are also prepared.

LIQUORES CONCENTRATI.

This class of preparations introduced into the British Pharmacopœia was intended to take the place of commercial concentrated decoctions and infusions. If one volume be diluted with nine volumes of water, these dilutions may be prescribed in place of the corresponding infusions and decoctions. The strength had been commercially 1 in 8 in the past, but the decimal arrangement by which all the rest of the world counts was adopted by the B.P. 1898.

Those of **Chiretta**, **Cusparia**, **Krameria**, **Quassia**, **Rhubarb**, and **Serpentary** are prepared by percolation with 20 per cent. alcohol, that of **Senega** with slightly stronger alcohol. They are of the uniform strength of 1 in 2, except Quassia (1 in 10), and the *dose* of each is ½ to 1 drachm (1·8 to 3·5 Cc.).

Liquor Calumbæ Concentratus (*Off.*), 1 in 2, is prepared by double maceration with cold water, heating to 180° F., and adding Alcohol (90 per cent.) 4½ parts in 20. *Dose.*—½ to 1 drachm (1·8 to 3·5 Cc.).

Liquor Sarsæ Compositus Concentratus (*Off.*) Sarsaparilla 20, Sassafras 2, Guaiacum 2, Liquorice 2, and Mezereon 1, are digested in three successive portions of water at 160° F., concentrated, and Alcohol (90 per cent.) 4½ added, to produce 20. *Dose.*—2 to 8 drachms (7 to 30 Cc.).

Sarsaparilla preparations combined with Iodides are sold as "Blood Purifiers."

Liquor Sennæ Concentratus (*Off.*) is prepared by repercolation, with water as a menstruum. heating the product to 180°F., and preserving with Alcohol and Tincture of Ginger. Strength 1 in 1. *Dose.*—½ to 1 drachm (7 to 30 Cc.).

Infusum Digitalis Concentratum, B.P.C., *v.p.*235.

Infusum Gentianæ Compositum Concentratum, B.P.C., *v.p.*112.

LITHIUM.

Lithii Benzoas, Lithium Benzoate, U.S.

Dose.—2 to 10 or 30 grains (0·13 to 0·65 Gm.).

Usually a light white crystalline powder, soluble 1 in 4 of water; contains about 95 per cent. of benzoic acid. Used as an antilithic.

Lithii Bromidum, Lithium Bromide, U.S.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

A white granular salt, very deliquescent, odourless, having a sharp, somewhat bitter taste and neutral reaction; very soluble in water and alcohol. A given weight contains nearly half as much more of bromine as the same weight of potassium bromide, and its effect as a bromide is said to be even greater than this ratio, especially as a hypnotic, and in epilepsy. Of great use in Bright's disease.—L. ii./95,685.

Lithii Carbonas, Lithium Carbonate (*Off.*).

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

Tablets, 5 grains (0·32 Gm.).

Lithii Citras, Lithium Citrate (*Off.*).

Dose.—5 to 10 grains (0·32 to 0·65 Gm.).

Tablets, 5 grains (0·32 Gm.).

Effervescent Lithium Citrate (*Off.*).

Dose.—1 or 2 drachms (4 to 8 Gm.). Contains 1 in 20.

'**Vescettes**' of **Lithia**, each containing 3 and 5 grains Lithium Citrate.

Lithii Glycerophosphas, *v.p.*26.

Lithii Guaiacas, Lithium Guaiacate.

Dose.—5 grains (0·32 Gm.) in pill with syrup twice a day.

Prepared by digesting guaiacum resin in solution of a lithium salt, decanting the clear solution, evaporating, and scaling it. Contains lithia 1, guaiacum resin 3. Given for chronic gout and rheumatism.

Pilula Lithii Guaiacatis, 5 grains.

Lithii Hippuras, Lithium Hippurate.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

In light white minute crystals, freely soluble in water, is a powerful solvent of lithates; useful in gout and rheumatism.

Lithii Salicylas, U.S., P.G.iv.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.) for rheumatism and gout. A deliquescent white powder soluble 1 in 1 of water.

Effervescent Lithium Salicylate contains 1 in 30 *Dose*—1 or 2 drachms.

Lithii Tartras Acidus.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

A finely crystalline white powder, of special use in gouty cases with gum affections.—L. i./94,1614.

Lithion is a granulated (non-effervescent) preparation composed of lithium citrate, magnesium sulphate, sodium sulphate, &c. *Dose.*—One-half to one teaspoonful taken in a little warm water.

Thialion is a laxative Lithia Compound.

Uricedin. A German specialty.

Dose.—1 to 2 drachms (4 to 8 Gm.).

In brownish-yellow granules, soluble in water, said to be prepared from concentrated lemon-juice by treating it with sulphuric and hydrochloric acids, neutralizing with soda, adding lithium citrate and evaporating to dryness. Recommended for gout, gravel, urinary calculi, articular rheumatism, and uric acid diathesis.

Tablets of 15 grains (1·0 Gm.).

LUPULINUM (*Off.*).

Dose.—2 to 5 grains (0·13 to 0·32 Gm.) in pill, with glycerin and spirit.

The bright yellowish glandular powder — lupulinic glands—separated from the strobiles of the hop—*Humulus Lupulus.* It is aromatic and bitter, and contains most of the active properties of the hop—the resin and volatile oil. It is used in insomnia and for alcoholism.

Tinctura Lupulinæ, U.S., 1870. 1 in 8 S.V.R. *Dose.*—10 to 60 minims (0·6 to 3·5 Cc.).

Tinctura Lupuli (*Off.*) *Dose.*—½ to 1 drachm (1·8 to 3·5 Cc.). Is prepared from the dried strobiles 1 in 8 Alcohol (60 per cent.). A much more aromatic preparation is made from fresh hops in an equivalent quantity.

The extractive from the drug varies greatly. A standard of 4 per cent. for the tincture has been suggested.

Hop Pillows used to induce sleep are prepared, and it has been suggested that **smoking** the dried strobiles has a somniferous effect.

Extractum Humuli Fluidum. *Dose.*—5 to 10 m. An alcoholic aqueous extract, 1 = 1; a solid extract is made by further concentration. *Dose.*—2 to 6 gr.

LYCOPODIUM.

Clubmoss Spores.

The spores of *Lycopodium clavatum*, form a fine, yellow powder. It forms a good pill powder, protecting hygroscopic pills, is useful as a diluent for insufflations for the throat and ear, and as an inert dusting powder for excoriated and weeping surfaces of the skin. When ignited, it explodes with a flicker. Has been given in cases of frequent micturition, and irritation or spasm of the bladder.

Tinctura Lycopodii. *Dose.*—15 minims to 1 drachm (0·9 to 3·5 Cc.). Lycopodium, first soaked in ether and dried, 1, Alcohol (90 per cent.) 10.

MAGNESIUM.

The metal magnesium is largely used for burning to produce a white light for photographic purposes.

Magnesii Carbonas Levis (*Off.*). Is prepared by precipitation of Magnesium Sulphate Solution with Sodium Carbonate. The **Ponderosus**, similarly in more concentrated solution and with evaporation to dryness. *Dose*—5 to 30 grains repeated, or 30 to 60 grains as a single administration.

Magnesia Levis and Magnesia Ponderosa are prepared from the respective carbonates by exposure to a dull red heat. *Doses* as for carbonates.

Magnesii Glycerophosphas, *v.p.*26.

Magnesii Peroxidum, *v.p.*300.

Magnesii Sulphas.

Dose.—30 to 120 grains repeated, or ¼ to ½ ounce for a single administration.

Dysentery in South Africa treated by the "Evacuant Method"—Magnesium and Sodium Sulphates, Castor Oil, Calomel also with Ipecacuanha Powder.—L.ii./03,7.

Magnesii Sulphas Effervescens (*Off.*).

Dose.—½ to 1 ounce (15 to 30 Gm.), or 1 to 4 drachms (4 to 16 Gm.) repeated.

Enema Magnesii Sulphatis. ½ to 2 ounces in ½ to 1 pint of water.

Enema Magnesii Sulphatis Acida.
Syn. HENRY'S SOLUTION.

Magnesium Sulphate 7 ounces, Dilute Sulphuric Acid 1 ounce. Distilled Water 7 ounces.

'**Vescettes' of Magnesium Sulphate**, each containing 30 grains. To be crushed and dissolved in a small draught of warm water.

Mistura Alba. *Dose*—½ to 2 ounces. St. Th. H.
Has Magnesium Sulphate 30 grains, Magnesium Carbonate 15 grains, and Peppermint Water 1 ounce.

This is a pleasant and efficient aperient.

U.C.H. has 60 and 80 grains respectively.

Magnesii Sulphis, *v.p.*45.

MALTUM.

Malti Pulvis. *Dose.*—1 to 2 drachms (4 to 8 Gm.).
Malt flour or entire malt powdered, is added to baked wheaten flour in various proportions to form the popular infants' foods, and is given to assist digestion. When these are mixed with hot water or a mixture of hot milk and water, the starch contained in the wheaten flour becomes soluble and digested into dextrin and malt sugar. The diastasic property of malt is most acute in aqueous solution at 104° F.—a boiling heat destroys it. A small teaspoonful of malt flour may be sprinkled over or mixed with cooked farinaceous foods. such as porridge, gruel, bread and milk. or arrowroot. when cool enough to sip, or it may be infused in a cup of coffee, glass of beer, or cold water; the latter form pleasant and useful beverages when taken with meals, to assist the digestion of bread or other farinaceous food.

Diastase or *Maltine*, *Codex Supp.* Obtained by exhausting malt with tepid water, precipitating with alcohol, and drying under 45° C. Is a yellowish white powder or in translucent scales. Diastase should convert 300 times its weight of starch into sugar and dextrin. Its use is indicated by the presence of starch grains in the fæces, or urine.

Soxhlet's Nutrient Sugar. Malt, dextrin. acid and common salt; added to food for infants.—B.M.J.E. i./02,27.

Extractum Malti, B.P.C., G.H.—*Syn.* EXTRACTUM BYNES. *Dose.*—1 to 4 drachms (4 to 16 Gm.).

A syrupy, yellowish brown liquid, having a pleasant sweet taste, consisting principally of dextrin and malt sugar (maltose), and possessing some diastasic properties. It is made by mixing malt with tepid water, pressing, filtering, and evaporating below 131° F. Extract of Malt and its preparations are prescribed in cases of debility of all kinds, as a restorative, like cod liver oil, but particularly where digestion is weak. Its diastasic power is standardised by decoction of starch.

Maltine (a trade mark) is sold plain, with cod liver oil, with iron, with lime, with pepsin and pancreatin, with hypophosphites, with phosphates (malted chemical food), with phosphorus, iron, quinine and strychnine, with cascara, with creosote, and with coca wine.

Maltolivine *v.p.*379.

Extractum Malti Liquidum. **Bynin.**

Dose.—1 to 4 drachms (3·5 to 15 Cc.).

In place of evaporating malt infusion to the viscosity of the solid extract, if it be concentrated in vacuo to prevent decomposition of the ferment diastase until it has sp. gr. 1·375, and about 7 per cent. of alcohol added, making the finished product of sp. gr. 1·250, a liquid extract is formed which is more convenient for administration.

Bynin Amara consists of liquid malt extract with the phosphates of iron, quinine and strychnine. It is ¼ the strength of Easton Syrup. *Dose.*—2 to 4 drachms.

Extractum Malti Ferratum, G.H.

Iron Pyrophosphate 2, Water 3. Dissolve and add Extract of Malt 95. *Dose.*—1 to 4 drachms (4 to 16 Gm.)

Extractum Malti cum Oleo Morrhuæ, G.H., B.P.C. *Dose.*—1 to 4 drachms (3·5 to 15 Cc.).

The amount of oil in this preparation is variable—it should be at least 15 (20 G.H.; 25 St. Th. H. and L.H.) per cent.—P.J. 1894,162. A little salicylic acid is often added to preserve it.

Taka-Diastase. *Dose.*—1 to 5 grains (0·065 to 0·32 Gm.).

A whitish powder obtained by the cultivation of a fungus, *Eurotium Oryzæ*, on bran; possesses amylolytic properties. —L. i./95,1332; i./96,856.

Useful for gouty dyspepsia.—L. ii./03,1052.

MANGANESIUM.

Manganesii Oxidum Præcipitatum.

Dose.—3 to 10 grains (0·2 to 0·65 Gm.), or more, in pills with syrup. **Tablets**, 2 grains (0·13 Gm.).

Consists principally of hydrated manganic oxide, a bulky blackish brown powder, free from grittiness and entirely soluble in cold hydrochloric acid. Useful in gastrodynia, and in amenorrhœa taken 3 or 4 times a day before expected period.

In chlorosis it assists the action of iron salts, and is equally potent for amenorrhœa and less irritant than the permanganates.

Manganesii Citras. 'Soluble.' *Dose.*—3 to 5 grains (0·2 to 0·3 Gm.).

This is a double salt with Sodium Citrate. **Ferro-Manganese Citrate**, *Dose.*—3 to 10 grains (0·2 to 0·65 Gm.) [and combined with **Quinine** 15 per cent. *Dose.*—3 to 5 grains (0·2 to 0·3 Gm.) and with **Strychnine** 1 per cent. *Dose.*—1 grain (0.065 Gm.)] and **Ferro-Manganese Phosphate**—*Dose.*—3 to 10 grains (0·2 to 0·65 Gm.)—are also prepared. —P.J. ii./01,136.

Manganesii Hypophosphis.

Dose.—1 to 10 grains (0·065 to 0·65 Gm.).

A white or slightly rose-tinted powder, soluble 1 in 0 of water.

Manganesii Phosphas.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

A white powder, generally with a pinkish tint, nsoluble in water. From ½ to 1 grain is sometimes issolved in 1 drachm of syrup of ferrous phosphate for dose.

Manganesii Sulphas.

Dose, of powder.—2 to 10 or 60 grains or more 0·13 to 4 Gm.).

Is usually met with as a white powder with a faint nk tint, due to a little manganic sulphate. Crystals ay be obtained with difficulty, in form like ferrous lphate but with an amethyst tint. For jaundice, 60 ains is a cholagogue purgative.

Potassii Permanganas (*Off.*).

Dose.—1 to 3 grains (0·065 to 0·2 Gm.) in well-diluted solution, or in pill.

Capsules contain 1 grain (0·065 Gm.).

Potassium Permanganate may be prepared by oxidising manganese dioxide by the aid of potassium chlorate in the presence of potassium hydroxide.

The oxidising and disinfecting properties of a solution of this salt are well known. The official **Solution** contains one per cent. The **Saturated Solution** contains 1 in 20 of water. It has the advantage over other disinfectants in having a distinctive colour; it has no disagreeable odour, and besides being a deodoriser, it quickly disintegrates all fetid and decomposing organic substances and albuminoid bodies, whether in a solid form or in solution, living or dead, with which it comes in contact. It destroys bacteria with great rapidity.

Potassium permanganate is used for dyeing white hair to a chestnut brown colour.

In amenorrhœa, 1 or 2 grains, in a pill 3 or 4 times a day for a few days before the time of the expected period, will bring on the flow almost to a certainty.

Very useful in certain cases of menstrual suffering.—B.M.J. i./03,139.

In gonorrhœa, solution of ½ grain in 1 ounce recommended as an injection.

Danger of ulceration being caused by permanganat tablets.—B.M.J. i./85,308,413,516,764,974.

For lupus and psoriasis used as lotion with success.—P.J. ii./02,73; B.M.J. i./03,1491.

Rectal injections of 4 grains to the pint of wate check asylum dysentery.—L. i./02,588.

Snake poisoning treated successfully by free injection of 15 per cent. solution. 90 grains used in multipl injections with free incisions.—Th. Gaz. 1892,9; B.M.J ii./92,728.

Potassium permanganate is, perhaps, one of the be antidotes for morphine and opium poisoning, as decomposes the alkaloid when in solution, but the tw must come into contact.—B.M.J. i./94,649; ii./95,76 i./96,82,1193,1194; P.J. i./96,413; Pr. liii.43,22 L. ii./97,1113.

A successful antidote to phosphorus, *v.p.*401.

Also antidotal to strychnine, colchicum, savin, an oxalic acid poisoning in animals; and if administered immediately, to cyanide of potassium.

A saturated solution applied to ulcerating lupus of the face with good results.—B.M.J. ii./03, 194.

Nebula Potassii Permanganatis, T. H. Potassium Permanganate 1 grain, Sodium Chloride 5 grains, water to 1 ounce.

Pilula Potassii Permanganatis.

Potassium Permanganate ... 1, 1½, 2, 3, 4 or 5 grains.
Kaolin Ointment (*v.p.*334) ... *q.s.*

To make a pill, care must be taken not to triturate Potassium Permanganate with any easily oxidised substance, like sugar, syrup, or glycerin, else spontaneous combustion may occur. The pills may be coated with sandarach solution and rendered tasteless. A solution of Potassium Permanganate is very nauseous.

Tablets contain 1, 2 and 3 grains in each. To be dissolved.

'**Solubes**' 5 grains for preparing lotions and vaginal injections; to be dissolved in ½ a pint or more of water.

Sal Hartini, Hartin's Crimson Salt, is said to contain Potassium Permanganate.

Calcium Permanganate.

Is preferred for making mouth lotions, as it has least taste. Possesses far greater sterilising power than potassium permanganate. 1 in 100,000 to sterilise water in 5 minutes.—P.J. i./95,1092; ii./95,69.

Sodium Permanganate, in solution, red in colour, is used as a cheap disinfectant. **Condy's Red Fluid** contains this salt. This manufacturer's **green fluid** has Sodium Manganate in solution.—L.ii./00,1587; i./03,971.

Zinc Permanganate, in deliquescent dark brown iridescent crystals, like the Potassium salt, is used for lotions and injections, where the astringent action of the zinc is indicated, *v.p.*524.

Liquor Ferro-Manganesii Peptonati, *v.p.*262.

MENTHOL (*Off.*).

METHYL-PROPYL-PHENOL HEXAHYDRIDE.

Dose.—½ to 2 grains (0·032 to 0·13 Gm.) or more in a pill with powdered soap, or in solution in olive oil.

A white crystalline substance deposited on coolin
Oil of Peppermint. Moist from adhering liquid oil
Imported principally from Japan, and obtained fron
Mentha arvensis, vars. piperascens et glabrata, and o
M. piperita, it melts at 107·6° F. It is insoluble i
glycerin, but soluble 5 in 1 of 90 per cent. alcohol, als
freely in ether, chloroform, and 1 in 4 of Olive Oil
sparingly soluble in water, but imparts to it the stron
odour and taste of peppermint. It produces a warmt
and glow on the tongue, and sensation of coo
ness on drawing the breath over it. Given internally,
acts as a diffusible stimulant. Its solutions, applie
topically to the skin in a similar manner, affect th
nerves of the part somewhat like aconite, and form usef
pigments for neuralgia, having the advantage of bein
non-poisonous. It has antiseptic properties, and is n
caustic; its action more resembles that of an anæstheti
and gives great relief in prurigo. The moist variety
put up and sold, moulded into cones, sticks and penci
for relieving neuralgia. It liquefies when gently rubb
on the painful part.

Equal parts of Menthol and Thymol rubbed togeth
liquefy and form an oily liquid, and similar liquefactions ta
place on triturating respectively equal parts of Ment
and Absolute Phenol, equal parts of Menthol and Chlo
Hydrate, 3 parts of Menthol and 2 parts of Camphor,
parts of Menthol and 1 part of Butyl Chloral Hydra
and 2 parts of Menthol, with 1 of each Phenol a
Butyl Chloral Hydrate. These form colourless tra
parent oily fluids; when applied on cotton wool
useful for relieving toothache arising from carious tee
or preparing them for stopping; the pain is promp
relieved, and all symptoms obtunded during the proc
of filling. Its Camphor and Phenol combinations
used to medicate **oro-nasal 'Ozonic' and t**
Nasal 'Ozonic,' and other dry inhalers, and are m
beneficial for arresting and curing colds, and reliev
influenza and chest affections.

Menthol Camphor and other combinations, dil
with a heavy mineral oil, or preferably in spirit
solution, for spraying into the nares or inhaled as ab
relieves swelling and irritability of nasal catarrh,
tracts capillary blood-vessels of mucous membr
reduces swelling, relieves pain and fulness of b

rests sneezing, checks excessive discharge, and corrects rverted secretion.

mplastrum Menthol, Menthol Plaster (*Off.*). Menthol 1½, dissolved in melted Yellow Wax 1, and Resin 7½. Useful for rheumatism and intercostal neuralgia.

njectio Menthol, C.L.T.E.
Menthol 2½ gr., Liquid Paraffin 1 ounce. For use th an Eustachian catheter to the middle ear.

inimentum Menthol.
Menthol 3, Chloroform 4, Olive Oil *q.s.* to 16; is eful in lumbago, neuralgia, sciatica, and ringworm of e scalp.

enthol cum Aconitina. Add Aconitine 1 grain, in 90 per cent. Alcohol 20 minims, to Menthol (melted) to make 300, 400, or 500 grains. Divide into 60-grain cones.

entholeate. Menthol 200 grains, Oleic Acid ½ ounce. Heat gently to dissolve. Useful in pruritus, etc., where absorption is desired.—Pr. xl.65.

astillus Menthol, T.H., contains ⅙ grain.

igmentum Menthol, G.H.—1 to Olive Oil 4. Painted or injected into the larynx, or even the trachea, useful in phthisis and laryngeal disease. Also applied on wool for ear affections.—Pr. xlvi. 142; B.M.J. ii./92,252. **Nebula,** a solution in liquid paraffin is used for spray or pigment for throat, 5 to 10 grs. to ounce, T.H., or Olive Oil, C.L.T.E. A **Snuff** for nasal catarrh, consisting of menthol 1, ammonium chloride 3, boric acid 2, and lycopodium 6, gives great relief. Another formula: menthol 1, boric acid 10, ground coffee 10.

abellæ Menthol. *Dose.*—1 or 2, *ad libitum.* Contain ⅕ grain menthol, combined with chocolate, e oil of which fixes it.

inctura Menthol Ætherea.
Menthol 1, Purified Ether to 8. Best applied with a ss brush.

Menthol 1, Chloroform 10, Ether 16, as a spray, proces temporary local anæsthesia.

As an antiseptic and antineuralgic, 1 in 60 of rectified rit, with a little oil of cloves added; useful in sciatica, ercostal neuralgia, and the crystals on cotton wool for thache.

For ringworm of the scalp, 1 part Menthol in 4 volumes of chloroform and 12 volumes olive oil.—L. i./81,241.

Menthol inhaled relieves cough.—B.M.J.E. ii./01,59.

The rectal injection of menthol 1 grain in olive oil 1 ounce is useful against threadworms.

Validol. *Dose.*—10 to 15 minims (0·6 to 0·9 Cc.).

A specialty said to contain 30 per cent. of menthol in methyl valerianate, is a colourless liquid with an agreeabl odour and free from burning taste of menthol. Given i wine or on a lump of sugar it acts as a useful analeptic i the depression of hysteria or in neurasthenia.

METHYL CHLORIDUM.

This gas, compressed into metal cylinders, is use as a local anæsthetic; applied as a jet, it freezes the par by the intense cold it produces.

Methyl Chloride may be employed in all kinds c small operations—circumcision, opening abscesses, an in neuralgia, lumbago, muscular pains, gout, etc. I scraping lupus it is best applied by means of a camel hair brush, as special parts can then be anæsthetised wit perfect precision. For the above purposes the chlori should be contained in a glass tube surrounded by vacuum, which prevents its quick volatilisation, know as a 'thermo-isolator.'

It is used in the treatment of sciatica and neuralg with success, also in articular rheumatism (acute and su acute), nodular and chronic rheumatism, stitches in t side, pleurisy, tuberculosis, and pneumonia. The spr is applied obliquely, not perpendicularly, on t cutaneous surface, and only for five or six seconds, if prolonged, blisters or eschars may result; to obvia these possible ill effects the skin should be painted wi glycerin, or initially a little should be applied on cott wool.

METHYLENE.

Syn. Formerly called METHYLENE BICHLORIDE.

Under this name is sold an anæsthetic, which a dense colourless ethereal liquid, with a chlorofor like odour. It has, however, caused many deaths.

It is more rapid in producing unconsciousness t chloroform, and quicker in passing off.

MOLLINUM.

A white inodorous superfatted soap, containing about 17 per cent. excess of fatty matter. It is of unctuous consistence, and is recommended as a basis for ointments in place of lard, lanolin, &c., as it is readily washed off with water, with which it forms a lather. It thus leaves the skin fresh and supple, and it makes no grease spots on linen. It is to be preferred to petroleum bases where absorption is required, and is specially recommended in combination with mercury, and with iodide of potassium, forming **Mollinum Hydrargyri** and **Mollinum Potassii Iodidi**; these contain 33 per cent. and 10 per cent. respectively of mercury and potassium iodide. It is not even incompatible with mercuric chloride, with which it forms a useful application for gynæcological cases in 1 per cent. admixture or weaker. It blends well with respectively 3 to 5 per cent. of phenol and salicylic acid and thymol, and with tar (birch tar particularly) 10 to 20 per cent. for psoriasis;—with 30 to 50 per cent. of sulphur or 10 per cent. of storax for acne and scabies;—with 5 per cent. of chrysarobin or naphthol;—and with 10 per cent. of ichthyol, resorcin, iodoform, naphthalene, or white precipitate.

MORPHINA.

Dose.—$\frac{1}{10}$ to $\frac{1}{3}$ grain (0·0065 to 0·02 Gm.)

This alkaloid, to which the medicinal effects of opium are principally due, in the pure state is, if precipitated from an aqueous solution of its salts, a white amorphous powder, or, if crystallized from an alcoholic solution, is in white, shining, transparent acicular prisms, insoluble in water and ether, freely soluble in boiling and but slightly n cold alcohol and fixed oils; soluble in caustic potash solution, milk of lime, and readily dissolved by acids, forming salts, from solutions of which it is precipitated by ammonia, but not by potash. The crystallized alkaloid s a hydrate containing one molecule of water of crystallization; it loses about 6 per cent. on drying at 90° C. 3 parts of morphine are medically and commercially reckoned equal to 4 parts of any one of the official salts. Morphine preparations are incompatible with those of ferric chloride.

Antidotes.—Emetics should first be given and the stomach tube used. Wash out the stomach with Potassium Permanganate Solution; give strong hot coffee, or Ammonia, or Ether, Amyl nitrite inhalation. Physiological antidotes are Belladonna and Atropine. $\frac{1}{20}$ grain of the latter antagonises 1 grain Morphine. The following have also been given with good effect:—Nitroglycerin, Picrotoxin, Pilocarpine, Strychnine, Oxygen inhalation and Saline Solution intravenously (for the last mentioned see L. i./02,1317).

Cure of a case of Morphine poisoning by inhalations of Oxygen.—L. ii./98.545.

Puerperal eclampsia well treated by hypodermic injections of Morphine salts.—B.M.J. ii./03,1212.

The dose of morphine and of opium is often much increased when persons become addicted to their use

In **Morphine Habit** sparteine sulphate is recommended to gradually replace the morphine solution commencing with $\frac{1}{3}$, increased to $\frac{2}{3}$ grain, four to si times a day. Sodium Bromide and Nitroglycerin Tablet are useful, *v.pp.*476,366.

Camphor has been given to relieve the craving.—B.M.J.E. ii./02,56; also Heroin. B.M.J.E. ii./01,24 Dionin, B.M.J.E. i./99,83.

Oleatum Morphinæ.

Morphine 1 (or more if ordered), Oleic Acid 6 Dissolve.

Oleic acid will dissolve as much as one-tenth of i weight of pure morphine. The addition of morphine made to oleate of mercury applications when the latt cause much pain.

Morphinated Water (*Off.*).

Chloroform Water saturated with Morphine; is us in testing opium.

Morphinæ Acetas, Morphine Acetate (*Off.*)

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ grain (0·008 to 0·032 Gm.), whi may be increased.

In commerce a white amorphous powder, soluble 1 $2\frac{1}{2}$ of water (if recently made, or a little Acetic A may be required as the salt loses some on exposu soluble also about 1 in 100 in alcohol 90 per ce Liable to change and darken in colour.

Injectio Morphinæ Acetatis Hypodermica.

1 grain in 6 minims. *Dose.*—1 to 2 minims.

Morphine (pure alkaloid) ... 60 grains.

Place in an ounce vial and moisten with

Distilled Water ... ... 6 drachms.

Add

Acetic Acid ... ... 40 minims, or *q.s.*

to make the solution barely bright after being kept closed at a gentle heat for 24 hours. Then filter and sprinkle and wash the filter with sufficient

Distilled Water to make the product measure exactly ... 1 ounce.

Shake to make uniform, and keep the solution from the light in stoppered bottles, the stoppers of which should be coated by rubbing the ground part over with soft paraffin. If the stopper be then inserted firmly, it prevents any oozing or incrusting of the morphine around the neck of the bottle; a few drops of glycerin added, will, it is said, prevent any incrustation. It has a straw colour, changing to vinegar-brown on keeping.

On account of the *small quantity of liquid* required to be injected, many practitioners prefer this Injection of Morphine Acetate, 1 grain in 6 minims. **Caution.**—As the official injection contains Morphine Tartrate, only 1 grain in 22 minims, the Acetate solution must be prescribed, stored, and used with care. In B.P. 1885, the official Hypodermic Injection contained 1 grain of Morphine Acetate in 10 minims.

Injectio Morphinæ et Atropinæ Hypodermica.

Injection of Morphine Acetate.
(1 grain in 6 minims) ... 3 drachms.
Atropine Sulphate ... ... 1 grain.

Dose.—1 to 3 minims. 3 minims contain half a grain of morphine acetate and $\frac{1}{60}$ grain of atropine sulphate. Some practitioners prefer to use it *half* this strength. Although atropine is in many respects antagonistic to morphine, yet, given in combination with it in small doses, the former increases the sedative action and counteracts the disagreeable effects of the latter on the head, stomach, and bowels.

Ophthalmic Discs contain $\frac{1}{500}$ grain **Morphine** and $\frac{1}{500}$ grain **Morphine** with $\frac{1}{5000}$ grain **Atropine** respectively.

Liquor Morphinæ Acetatis (*Off.*).

Dose.—10 to 60 minims (0·6 to 3·5 Cc.).

Morphine Acetate 1, Diluted Acetic Acid 2, Alcohol (90 per cent.) 25, Distilled Water to 100.

Pastillus Morphinæ Acetatis ($\frac{1}{30}$ gr.), *v.p.*275.

Pastillus Cocainæ ($\frac{1}{15}$ gr.) **et Morphinæ** ($\frac{1}{30}$ gr.).

Morphinæ Hydrobromidum.

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ grain (0·008 to 0·032 Gm.).

In commerce is met with as a white amorphous powder resembling morphine hydrochloride, soluble 1 in 22 of water. Sometimes administered with hydrobromic acid as a sedative, and thought not to affect the head as much as other salts of morphine when given thus.

Morphinæ Hydrochloridum. (*Off.*).

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ grain (0·008 to 0·032 Gm.), which may be increased.

In silky white flexible acicular prisms, but usually me with in white powder (consisting of minute cubica crystals), soluble 1 in 24 of water, about 1 in 50 o alcohol 90 per cent., and about 1 in 8 of Glycerin. I is stable, and the most frequently used of the salts c Morphine.

Officially this dissolves in Sulphuric Acid withou colour. P.G. iv. states (without colour or only sligh rose colour).

Insufflatio Morphinæ.

Morphine Hydrochloride $\frac{1}{4}$ grain, Bismuth Oxychloride 1 grain, Starch $\frac{1}{2}$ grain.

Linctus Morphinæ, U.C.H.

Solution of Morphine Hydrochloride 3 minim Chloroform Emulsion 3 minims, Treacle 60 grain Water to 1 drachm. May be more agreeably flavour with syrup of lemon.

Dose.—A teaspoonful 3 or 4 times a day; or the dc may be repeated frequently at times when cough troublesome, till the paroxysm is subdued. It should taken undiluted, swallowed slowly, and allowed to ha about the throat. For children of 8 to 14 years, d 10 to 20 drops. It is not suitable for very you children, or where there is difficulty of expectoration bronchitis.

Mistura Morphinæ et Phenazoni Composita.

Dose.—1 ounce.

Solution of Morphine Hydrochloride 10 minims, Phenazone 15 grains, Tincture of Castor 20 minims, Spirit of Chloroform 10 minims, water to 1 ounce.

This forms what may be designated a specific for spasmodic dysmenorrhœa.

Linctus Sedativus. Brompton H. *Dose.*—1 drachm.

Solution of Morphine Acetate 8 minims, Chloric Ether 3 minims, Lemon Juice 15 minims, Mucilage of Acacia to 1 drachm.

Liquor Morphinæ Hydrochloridi (*Off.*).

Dose.—10 to 60 minims (0·6 to 3·5 Cc.).

Morphine Hydrochloride 1, Diluted Hydrochloric Acid 2, Alcohol (90 per cent.) 25, Distilled Water to 100.

Suppositoria Morphinæ (*Off.*).

Contain $\frac{1}{4}$ grain of hydrochloride in each. They are also usually kept, containing $\frac{1}{2}$ and 1 grain, as well as other strengths.

Tablets, Hypodermic, contain $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{2}$ and 1 grain.

Suppositoria Belladonnæ et Morphinæ, *v.p.*119.

Trochisci Morphinæ (*Off.*).

Contain $\frac{1}{36}$ grain (0·0018 Gm.) of the hydrochloride in each lozenge, with a sugar basis flavoured with tolu.

Trochisci Morphinæ et Emetin, *v.p.*327.

Trochisci Morphinæ et Ipecacuanhæ (*Off.*).

Contain $\frac{1}{36}$ grain (0·0018 Gm.) of morphine hydrochloride, with $\frac{1}{12}$ grain (0·0054 Gm.) of ipecacuanha in each. These lozenges are often given to allay cough—one 5 or 6 times a day.

Morphinæ Meconas.—Morphine Meconate.

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ grain (0·008 to 0·032 Gm.).

This, one of the natural salts of morphine existing in opium, when pure, is in white minute acicular crystals, soluble 1 in 34 of water. It is said to disturb the head less, as well as derange the stomach and bowels less, than the other salts of morphine administered either by the mouth or hypodermically.

Liquor Morphinæ Bimeconatis, B.P. 1885.

Dose.—5 to 40 minims (0·3 to 2·4 Cc.).

The late official solution may be made as follows:—

Morphine (pure Alkaloid) ...	14½ grains.
Meconic Acid	12 grains.
Alcohol (90 per cent.)	1 ounce.
Mix and add Distilled water to ...	4 ounces.

A perfect solution is formed instantly. One ounce is said to contain about 5½ grains or 1¼ per cent. of morphine bimeconate, and as regards this is about the same strength as tincture of opium.

Pills contain ¼ grain.

Tablets, Hypodermic, contain ⅛ and ¼ grain (0·008 and 0·016 Gm.).

Morphinæ Sulphas, Morphine Sulphate.

Dose.—⅛ to ½ grain (0·008 to 0·032 Gm.).

In hard white silky acicular crystals, is a stable salt of morphine and the one preferred in the United States. Soluble 1 in 23 of water.

Hypodermic Tablets contain ⅛, ⅙, ¼, ⅓, ½ and 1 grain; also combined with Atropine as follows:

Morphine Sulphate	⅛,	⅛,	⅙,	¼,	¼,	⅓,	½,	½	gr.
Atropine Sulphate	$\frac{1}{200}$,	$\frac{1}{150}$,	$\frac{1}{180}$,	$\frac{1}{200}$,	$\frac{1}{150}$,	$\frac{1}{120}$,	$\frac{1}{120}$,	$\frac{1}{100}$	gr.

Liquor Morphinæ Sulphatis, B.P. 1885.

Dose.—10 to 60 minims (0·6 to 3·5 Cc.).

Morphine Sulphate 1, Rectified Spirit 25, Distilled Water to 100. Must be distinguished from that used in the United States, which contains 1 grain in an ounce of distilled water. A preparation known as **Magendie's Solution** of morphine is also used in the United States; it is 16 times stronger than the last (containing 16 grains in the ounce). Magendie's Solution in France is slightly weaker than that of the United States; it contains 1 part of morphine acetate in 37½.

Pills of Morphine Sulphate contain ¼ grain.

Morphinæ Tartras, Morphine Tartrate (*Off.*).

Dose.—⅛ to ½ grain (0·008 to 0·032 Gm.).

In small white nodular tufts of acicular crystals readily soluble 1 in 10 of water.

Injectio Morphinæ Hypodermica. (*Off.*).

Dose.—2 to 5 minims (0·12 to 0·3 Cc.).

Morphine Tartrate 5, Distilled Water (recently boile and cooled) *q.s.* to 100.

Contains 1 grain in 22 minims. N.B.—Is slight less than one-half the strength of the preparation bearin this name in B.P. 1885, *v.p.*353.

In the preparation of this a small quantity of crystaline Morphine Acid Tartrate may separate.—P.J. i./o 134,178.

Liquor Morphinæ Tartratis (*Off.*).

Dose.—10 to 60 minims (0·6 to 3·5 Cc.).

Morphine Tartrate 1, Alcohol (90 per cent.) 25 Distilled Water to 100.

Morphine in diabetes as compared with Codeine is nore powerful, controlling the formation of sugar more ompletely; amount required only $\frac{1}{4}$ that of codeine; arcotic symptoms rarely follow when given every 3 or hours by mouth (not applicable to hypodermic adninistration), but codeine is generally preferred.

Opium and morphine may poison infants through the nother's milk; see a case in B.M.J. ii./85,1159.

Dionin, Ethyl-Morphine Hydrochloride.

Dose.—$\frac{1}{4}$ to $\frac{1}{2}$ grain (0·016 to 0·032 Gm.).

A white crystalline powder soluble about 1 in 10 of vater and 1 in 8 of alcohol 90 per cent. Recommended o replace codeine and morphine in bronchitis, pulmonary mphysema, and bronchial asthma.—B.M.J. i./99,675. Relieves cough.—B.M.J.E. i./03,60. Also for whooping ough. May be used hypodermically in doses of $\frac{1}{10}$ gr. n 5 minims of water.

Introduced for the treatment of morphine habit. Proluces no euphoria and consequently can be discontinued asily.—B.M.J.E. i./99,83; P.J. i./99,532d.

'**Sterules' of Dionin** (*v.p.*487) are prepared for phthalmic use of 5 per cent. strength; dionin is a seful anodyne in glaucoma, iritis, corneal ulcers, &c. olutions may be from 1 to 5 per cent. strength or more.

Heroin. Diacetyl-Morphine Hydrochloride.

Dose.—$\frac{1}{12}$ to $\frac{1}{6}$ grain (0·0054 to 0·01 Gm.) twice r thrice daily.

In white crystalline powder, soluble about 1 in 350 f water and about 1 in 19 of alcohol 90 per cent. Is ncompatible with alkalies, *e.g.* Ammonium Carbonate, odium Bicarbonate. Possesses in a greater degree he properties of codeine. Phthisical patients especially ave been greatly benefited by it.—B.M.J.E.ii./98,63,92; . i./99,1235.

A general analgesic, relieves coughs and eases breathng.—B.M.J. i./99,675; B.M.J.E. ii./99,87.

Checks irritable cough without narcotism.—B.M.J.E. '99,59; L.i./00, 180. For bronchitis.—B.M.J.E.i./01,8.

Useful in hay fever and acute coryza.—Therap. 1900,56. The larger doses originally suggested are disused, and but $\frac{1}{24}$ to $\frac{1}{12}$ for adults, $\frac{1}{120}$ to $\frac{1}{60}$ for children are given. Also used hypodermically.—Therap. 1901,12.

Has an anaphrodisiac effect.—B.M.J.E. i./04,20.

Physiological action.—B.M.J. ii./02,1219.

Solutions must not be acid, as acetic acid is apt to be split off with regeneration of Morphine.—P.J.i./04,4; B.M.J.i./04,708.

Toxic effects have followed dose of $\frac{1}{16}$ grain.—B.M.J. ii./03,868. Recovery after 9 grains.—B.M.J.E. ii./02,31.

Tablets Hypodermic, $\frac{1}{24}$ and $\frac{1}{12}$ gr.

Glycaphorm.—*Syn.* GLYCEROLE OF DIACETYL-MORPHINE HYDROCHLORIDE.

Contains $\frac{1}{48}$ grain Diacetyl-Morphine Hydrochloride in 1 drachm of a vehicle consisting of Glycerin 3, Syrup of Roses 4, water 1.

Dose.—1 to 2 drachms (3·5 to 7 Cc.).

This preparation forms a useful linctus for coughs, and is employed in bronchitis, pertussis, laryngitis, asthma, and similar disorders.

Glyco-Heroin.

Dose.—1 drachm (3·5 Cc.) repeated; children 15 t 30 minims (1 to 3 Cc.) or less.

A proprietary article. Is given for coughs.

Peronin. Benzoyl-Morphine Hydrochloride

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ grain (0·008 to 0·032 Gm.).

A whitish powder, soluble in water; is a mild sedativ and analgesic, recommended in asthma, phthisis, rheu matism, and neuralgia.

For cough, resembles codeine.—B.M.J.E. ii./98,43.

A 5 per cent. solution causes deep anæsthesia whe applied to the eyes.—B.M.J.E. ii./99,71; B.M.J i./99,675.

NAPHTHOL.

Beta-Naphthol. (*Off.*). P.G. iv.—NAPHTOL, U.S. BETA-MONO-HYDROXY-NAPHTHALENE.

Dose.—3 to 10 grains (0·2 to 0·65 Gm.) in cachet

β-Naphthol is prepared by heating Naphthalen (which is obtained by cooling the 180° to 220° C fractions of the distillation of coal tar) with stron Sulphuric Acid at 170° to 180° C., β-Naphthalen Sulphonic Acid being formed. This is converted firstl into the Calcium and then the Sodium Salt. By treatment at 300° C with Sodium Hydroxide this is converted into Sodium Naptholate, which is ultimately decomposed with Hydrochloric Acid, forming β-Naphthol and Sodium Chloride. β-Naphthol has a faint storax odour; when sublimed, in white shining laminar crystals; very soluble in alcohol, ether, chloroform, and benzol, soluble 1 in 8 of olive oil and lard, and 1 in 80 of vaseline. Addition of boric acid increases solubility in water. Has the advantage in skin diseases generally of being odourless and colourless. It is a powerful antiseptic and germicide. In advanced scabies, an ointment of 10 to 15 per cent. cures the eczema as well as destroys the parasite, but the **Compound Ointment** is preferred:—Naphthol 15, lard 100, green soap 50, prepared chalk 10. Useful also in psoriasis.

Naphthol 5, alcohol 100, glycerin 10, is a remedy for hyperidrosis of palms, soles, and axillæ.

Pilula β-Naphthol, 3 and 5 grains.

Tablets, 3 grains each.

Internally, useful in enteric fever; safe and efficient, but sometimes causes too much gastric disturbance.

Is useful in dilated stomach and dyspepsia, other gastric disorders, and diarrhœa of typhoid.

Recommended in cholera, as preventive, and in treatment of early stages.—B.M.J.E. i./93,67.

Successful use as a vermifuge; 4 grains three times a day.—L. i./93,377.

Inhalations of service in pharyngitis, catarrh, and bronchitis.

Experiments on intestinal asepsis.—B.M.J. ii./95,1483.

α-**Naphthol** is said to have three times the antiseptic power of and to possess only one-third the poisonous action of the β-naphthol, it is also more soluble.

With castor oil is specially adapted for use in intestinal troubles.

A solution of 5 grains in a quart of water is used to wash the intestines.

Acidum α-Oxynaphthoicum. *Syn.* NAPHTHOL CARBONIC ACID.

Dose—$\frac{3}{4}$ to 3 grains (0·05 to 0·2 Gm.).

Is in reddish masses, soluble in alcohol, benzole and volatile oils. Has an antiseptic and antipyretic action, and sternutatory property. Ointment (10 per cent.) is used for scabies, prurigo, and some other skin affections.

Alphol is isomeric with Betol, *v.p* 361.

Dose.—8 to 30 grains (0·52 to 2 Gm.), in cachet.

Salicylic ether of α-naphthol, in whitish powder, insoluble in water, soluble in alcohol. Resembles betol and salol in effects on articular rheumatism and cystitis, and as an intestinal antiseptic, breaking up into salicylic acid and α-naphthol.—P.J. 1894,815.

Benzonaphthol. — *Syn.* **Benzoyl - Naphthol.**

Dose.—4 to 10 grains (0·26 to 0·65 Gm.), in cachet or suspended in mixture. A white crystalline powder, tasteless, and with slight odour, obtained by the action of benzoyl chloride on β-naphthol. Soluble in alcohol and chloroform. Is a powerful intestinal antiseptic and diuretic, being broken up into β-naphthol, which remains in the intestines, and benzoic acid, which is eliminated by the kidneys. Should be given in small quantities, frequently repeated.

An antiseptic astringent, valuable in typhoid and for preventing fermentative changes in stomach, causing acid dyspepsia.—L. i./93,44; Pr. li.213; B.M.J.E. ii./92,21.

Tablets, 5 grains each; to be dissolved in a little water.

May usefully be combined with bismuth salicylate.

Asaprol. *Syn.*—**Abrastol.**

Dose.—10 to 30 grains (0·65 to 2 Gm.). A calcium salt of β-naphthol-sulphonic acid; a whitish powder freely soluble in water and alcohol; incompatible with most alkaline and alkaloidal salts, potassium iodide, and antipyrine. Resembles sodium salicylate as an antipyretic and antiseptic; especially useful in acute articular rheumatism, often taken when the salicylate cannot be borne, and given for influenza with high temperature, gout, asthma, and anthrax.

Asaprol as a test for albumen (*v.p.*594).

Eikonogen.

Sodium - amido - β - naphthol - β - monosulphonate, a photographic developer.

Epicarin. — *Syn.* **Epicarinum purum.**

A condensation product of β-Naphthol and Cresolic Acid, used as a dermatological remedy for psoriasis eczema and scabies, in a 10 or 20 per cent. Ointment. For mange in dogs, a 10 per cent. solution in Methylated Spirit, with 10 per cent. of Castor Oil, is effective applied every fifth day.

Scabies and prurigo in children, Epicarin 7, Prepared Chalk 2, Vaseline 30, Lanolin 15, Lard 45, as an ointment, 5 or 6 applications successful.—P.J. ii./00, 577; i./01,36.

For seborrhœa capitis a 5 per cent. alcoholic solution with 15 per cent. of Ether is useful; a 10 per cent. ointment is recommended for chilblains in the painful reddened unbroken stage.

For Tinea Circinata a 10 or 20 per cent. alcoholic or soda solution, or ointment.—M.A. 1904,624.

Microcidine.

A whitish powder, prepared by fusing β-naphthol with caustic soda; contains 75 per cent. of sodium naphtholate, and 25 per cent. of mixed naphthol and phenol compounds. Is a powerful antiseptic, non-poisonous. Soluble 1 in 3 of water; solution 1 in 200 or 300 recommended for lotions and dressings.—P.J. 1891, 1067; B.M.J.E. i./91,167; ii./93,72.

Naphthol cum Camphora. Naphthol Camphor.

β-Naphthol 1, Camphor 2, mix to form a viscid liquid, miscible with oils. It is a powerful non-toxic antiseptic for wounds. A weaker preparation has been used with success as an interstitial injection in phthisis. Recommended to smear over and protect surgical instruments.

Improvement in 32 cases of tuberculous adenitis, also in three of tuberculosis of testis, treated by interstitial injections of camphorated naphthol.—B.M.J.E. ii./91, 125.

Betol.—*Syn.* **Naphthalol.**

Dose.—3 to 8 grains (0·2 to 0·52 Gm.) in cachets or pills, or suspended in almond emulsion or milk.

The salicylate of β-Naphthol-ether. Is in small tasteless and odourless, brilliant white crystals, insoluble in water, soluble in alcohol. Useful in rheumatism, cystitis, and intestinal catarrh.

Bougies of Betol 1 part, cacao butter 4 parts, have proved useful in gonorrhœa; of any length up to 6 inches, and in six diameters, see Bougies, *p.*126.

Cachets containing 5 grains, with 5 grains of bismuth salicylate, useful as an intestinal disinfectant. Is contra-indicated in cases associated with renal disease.

Naphthalene.—*Syn.* **Naphthalinum, P.G. iv.**

Dose.—2 to 15 grains (0·13 to 1 Gm.) or more in cachets.

Pilula Naphthalini, 3 grains.

A hydrocarbon formed in large quantities in th manufacture of coal gas. It is when pure in shinin white rhomboid crystalline plates, with persistent, bu little tarry odour; it is insoluble in water, acidulated o alkaline, but is soluble in ether, hot alcohol, and in fats fixed and volatile oils. May be given in malt extract.

Moulded into blocks or sticks, it is sold under variou trade names, such as Alabastrine, for preventing moths Camphylene, for disinfecting urinals and stables; an Albo-carbon, for increasing the luminosity of gas.

Naphthalene Tetrachloride.—*Syn.* Naphthalin Hydrochloride. *Dose.*—3 to 12 grains (0·2 t 0·8 Gm.), in cachets or pills. In odourless and colourless rhombohedral crystals, melting at 182° C., insolubl in water.

As Naphthalene is not absorbed by the system it act only on the mucous membrane of the bowels. It form a valuable remedy in dysentery, catarrhal typhoid, an phthisical diarrhœa. 8-grain enemata are useful. I painless in action, and promotes healing of ulcers. Give internally with success to lessen fœtor of urine an stools. Used as a vermifuge in tænia and ascarides.

A 10 to 20 per cent. solution in oil is successful as parasiticide in scabies, but does not relieve the secondar eruptions.

Useful intestinal antiseptic in enteric fever.—B.M. ii./92,167.

Vapour inhaled for whooping-cough useful.—L. ii./9 1180; B.M.J.E. ii./91,189; i./92,3.

NARCEINA.

Dose.—⅛ to 1 grain (0·008 to 0·065 Gm.), in a pil

An alkaloid obtained from opium in light whit flexible silky crystals. Has a slightly bitter taste—is weak base, soluble 1 in 400 of water, very soluble in alcohol, insoluble in ether. It is a soporific, produces no constipation, less headache and perspiration than morphine, and checks cough of pertussis.

Is a pure but feeble narcotic, 5 grains or more are required to produce slight tendency to sleep.

NARCOTINA.

Syn. ANARCOTINE.

Dose.—1 to 3 grains (0·065 to 0·2 Gm.) or more in a pill with glycerin of tragacanth.

An alkaloid obtained from opium, in white inodorous crystalline prisms. It is a very weak base, insoluble in water, soluble 1 in 3 of chloroform, 1 in 100 of 90 per cent. alcohol, 1 in 125 of ether, soluble also in benzol. Possesses antiperiodic properties, like quinine, some considering it superior, in doses of 1 to 3 grains.—R.

Physiological investigation; narcotine resembles morphine in action, but much weaker; while **Thebaine** more closely resembles strychnine than morphine. The nucleus of the molecule is probably the same in both, as well as in their derivatives, methyl-thebaine and cotarnine. —B.M.J. i./91,157.

Cotarnine Hydrochloride. *Syn.* **Stypticin.**

Dose.—$\frac{1}{4}$ to $\frac{1}{2}$ grain (0·016 to 0·032 Gm.) internally or hypodermically.

The salt of an opium base in primrose-coloured granular crystals, very soluble in water and alcohol. Is allied to Hydrastinine (*v.p.*297), being Methoxyl-Hydrastinine. Recommended in all forms of uterine hæmorrhage.—P.J. ii./95,471; B.M.J.E. i./96,7; i./98,27,71; ii./98,104.

Tablets, $\frac{3}{4}$ grain (0·05 Gm.).

Stypticin Wool, 30 per cent. and **Gauze** are made.

Urethral Bougies of cacao butter or gelatin contain $\frac{1}{2}$ grain (0·03 Gm.), are made four inches long and $\frac{1}{5}$ inch in diameter, are useful to check bleeding caused by sounds or catheters. Erysipelas, eczema and shingles may be treated with a 5 per cent. **Ointment.**

NEBULÆ.

These are solutions for application to the throat and nose by the aid of a fine spray apparatus or atomiser. By means of a metal or vulcanite tube, a jet of fine spray may be directed into the pharynx or nares, and if a deep breath be taken at the proper moment some of the spray will enter the larynx. The patient must be taught to carry this out out for himself. Nebulæ are aqueous, or of Liquid Paraffin, Almond Oil or Olive Oil.

For list of those in use consult index. The following are also employed :-

Menthol, Camphor, of each 20 grains, Cinnamon Oil 5 minims, Paraffin to 1 ounce.

Eucalyptus Oil 5 minims, Wintergreen Oil 5 minims, Menthol 5 grains, Liquid Paraffin to 1 ounce. For dry catarrhs.

Creosote 5 minims, Cassia Oil 5 minims, Eucalyptus Oil 5 minims, Liquid Paraffin to 1 ounce. For the treatment of phthisis.

Cocaine 2 grains, Cinnamon Oil 5 minims, Menthol 15 grains, Liquid Paraffin to 1 ounce. For chronic nasal catarrh and congestive state of the Eustachian tubes.

NICOTINA.

Dose.—$\frac{1}{6}$ to 1 grain (0·01 to 0·065 Gm.).

A colourless volatile liquid alkaloid, obtained from tobacco—*Nicotiana Tabacum.* Darkens with age, has a strong, disagreeable odour, soluble in water, more so in alcohol and ether.

Tetanizes the heart, has been highly praised for tetanus. Many recorded cases appear to show its usefulness in this disease. Is an antidote to strychnine.

Bad effects of smoking due not only to Nicotine but to carbon monoxide, pyridine and a volatile oil containing a phenol.—P.J. i./01,459, *ex* Schweiz. Woch., 39, 27.

Nicotine Salicylate, Eudermol.

In yellowish-white granular crystals, freely soluble in water; 1 per cent. in ointment of lard, soft paraffin olive oil, or traumaticin effective in treatment of sycosis Scabies cured by 6 applications. Inodorous, does not soil linen.—P.J. i./99,227; B.M.J.E. ii./99,47.

X.L. All Vaporizer. Is a mixture containing Nicotine, Camphor and Alcohol. Vaporized is effective as an insecticide for plants. A solid 'X.L. All Vaporizing Compound' is also sold.

NITROGLYCERINUM.

Syn. TRINITROGLYCERIN; GLONOIN; TRINITRIN.

Dose.—$\frac{1}{200}$ to $\frac{1}{50}$ grain (0·00032 to 0·0013 Gm.) increased to $\frac{1}{10}$ grain.

This dangerous explosive substance proves to be of great medicinal use, especially in angina pectoris. It is a dense, opaque, white, oily liquid, transparent and colourless when dehydrated, and of Sp. Gr. 1·600. It drops in very small drops. It has no odour, is slightly volatile, and has a sweet, aromatic, and pungent taste. It is slightly soluble in water, freely soluble in ether, 1 in 6 of almond oil, freely soluble in absolute alcohol, and 1 in 15 of 90 per cent. alcohol. Nitroglycerin, especially if not perfectly pure, is liable to explode spontaneously, but in fatty or oily solution it is perfectly safe and stable.

Nitroglycerin, in two minutes after taking a dose, accelerates the pulse, relaxes the arteries, produces a feeling of fulness all over the body, but particularly in the head by a throbbing at the sides of the temples. It also causes headache, which lasts from 15 minutes to several hours, according to the quantity taken; but to patients accustomed to its use the headache is not felt. In treating angina pectoris, neuralgia, asthma, headache, sea-sickness, and Bright's disease, its action is like that of amyl nitrite, but its effects last much longer. For the weak heart of fatty degeneration and of old persons, this lessened tension proves valuable.

Nitroglycerin acts more powerfully than the nitrites at present in use.

The circulation is distinctly affected by even $\frac{1}{1600}$ grain.—D. J. Leech, 1903.

Injectio Nitroglycerini Hypodermica.

Dose.—1 to 4 minims (0·06 to 0·24 Cc.).

Nitroglycerin Solution (*v.p.*366) 5, Alcohol (90 per cent.) 2, Distilled Water to 12.

Contains about $\frac{1}{240}$ grain in 1 minim. Acts promptly; useful in collapse, &c., when the patient cannot swallow.

Successful in morphine poisoning.—B.M.J.E.ii./90,77.

Tablets, Hypodermic, $\frac{1}{100}$ and $\frac{1}{25}$ gr.

Liquor Nitroglycerini, 1 per cent. *Made official as*

Liquor Trinitrini (*Off.*).

Dose.—½ to 2 minims (0·03 to 0·12 Cc.) gradually increased to 10 minims, if necessary, every 3 or 4 hours, in any aqueous vehicle.

Trinitroglycerin ... ... 1 part by weight.
Alcohol (90 per cent.) *q.s.* to 100 fluid parts.

Dissolve. Sp. Gr. 0·840. 110 minims contain 1 grain. A colourless neutral liquid; 10 Cc. with an equal volume of water keeps clear, but the further admixture of 1 Cc. of water causes opacity (presence of full proportion of trinitroglycerin). Diluted further, the latter separates in oily drops, which explode when struck with a hammer. Should be kept from sunlight. A five and a ten per cent. solution in absolute alcohol are also prepared commercially, but are not safe for use in dispensing. (**Spiritus Glonoini, U.S.,** has 1 per cent. by weight.)

Haustus Nitroglycerini vel Trinitrini. Vict Park. *Dose.*—½ to 1 ounce.

Solution of Trinitrin 1 minim, Spirit of Chloroform 15 minims, Compound Tincture of Cardamoms 2 minims, Water to 1 ounce.

Oleum Nitroglycerini, 1 per cent. in almond oil.

Dose.—1 to 2 drops or more on sugar. Recommended as being more stable than the alcoholic solution.

Capsules (gelatin) of Nitroglycerin.

Dose 1 or 2. Contain $\frac{1}{100}$ gr., or more or less a prescribed, in stable solution.

Pilula Nitroglycerini.

Is made with a theobroma-oil basis to contain $\frac{1}{100}$ t $\frac{1}{50}$ grain or more.

Tabellæ Nitroglycerini, B.P. 1885.

Introduced by the late William Martindale in 1878 $\frac{1}{100}$ grain in each. These tablets have the nitroglyceri in solution in chocolate, 2½ grains, in a perfectly safe an inexplosive, stable and non-volatile, portable and palatabl form. The small bulk, precise dose, and quick action, if we masticated and swallowed, render this mode preferabl for administering nitroglycerin. *Dose.*—1 or 2.

Box-wood pocket cases for carrying these tablet are supplied.

Additional Strengths of Tabellæ.

The tablets are also prepared containing $\frac{1}{75}$, $\frac{1}{50}$, and $\frac{1}{25}$ grain, and 1 milligramme respectively, for those accustomed to their use, as well as $\frac{1}{200}$, $\frac{1}{400}$, and $\frac{1}{800}$ grain in each, for administration to ladies, delicate persons and children, for whom this is a sufficient dose to ward off sea-sickness. The tablets appear to be non-poisonous even to children; a surgeon records that on one occasion two children, one three and the other six years of age, ate between them straight away two dozen, $\frac{1}{100}$ grain in each, without any injurious effects.

One tablet every three or four hours to relieve or ward off attacks of angina pectoris, sea-sickness, neuralgia, Bright's disease, headache, epilepsy, and may be tried for dysmenorrhœa. A dose of any preparation of nitroglycerin acts more promptly if taken on an empty stomach.

Fifty per cent. of cases of sea-sickness are benefited by the nitroglycerin tablets.—B.M.J. ii./80,512,691; ii./93,596.

Nitroglycerin tablets should be taken when the patient is threatened with an attack of asthma; or, if the attacks occur in the night, at bedtime, or whenever the patient wakes.—B.M.J. ii./81,424,543.

Tabellæ Trinitrini, Trinitrin Tablets (*Off.*).

Tablets of chocolate, each weighing 5 grains (0·324 Gm.), and containing $\frac{1}{100}$ grain (0·00065 Gm.) of Trinitroglycerin.

These *Official* tablets are now double the weight of those in B.P. 1885, and as first manufactured by W.M. This dilution diminishes their value as a remedy of prompt action. *Dose.*—1 or 2, *vide* Tabellæ Nitroglycerini, *p.* 366.

Tabellæ Nitroglycerini Compositæ, W.H.

Contain Nitroglycerin $\frac{1}{100}$ grain, Amyl Nitrite $\frac{1}{4}$ grain, Menthol $\frac{1}{50}$ grain, Capsicum $\frac{1}{100}$ grain.

References to use of Nitroglycerin.

Bright's disease, acute and chronic, and in vascular tension of the aged, the 1 per cent. solution in dose of 1 to 3 minims was successful.—B.M.J. ii./80,803.

Myxœdema, case of, treated successfully with $\frac{1}{80}$ grain doses of nitroglycerin in conjunction with elaterium purgings.—L. i./82,440.

Puerperal convulsions, $\frac{1}{100}$ grain every hour arrested in 4 or 5 doses.—B.M.J. i./82,573.

In epileptic vertigo, 1 to 2 minim doses of 1 per cent. solution quite relieved.—Pr. xxx.105.

In migraine, due to anæmia, a minim of 1 per cent. solution repeated every half-hour, if desirable, useful also in epilepsy, especially in cases of *petit mal* given in conjunction with bromides.—New York Med. Jour. Dec. 1882,662.

In a case of angina pectoris, the effect of 1 per cent. solution in 1 to 3 minim doses compared with that of nitrite of sodium.—Pr. xxx.179,321; xlvi.253.

In uræmic asthma, $\frac{1}{100}$ grain doses thrice daily, was useful.—B.M.J. i./83,811.

On account of its stimulating effect on the heart and blood vessels, is recommended as a substitute for alcoho where brandy is indicated; dose is small and tasteless and its action is almost immediate. Useful in collapse from chloroform, or typhoid and other fevers, shocks from accidents, and nausea and faintness from surgica operations.—L. ii./85,257. Further therapeutic researches. Strychnine, ergot, and belladonna recommended as antidotes.—L. i./89,1238,1297.

In nephritis, it increases the amount of urine, whils lessening the amount of albumen.—Pr. xxxiv.67; L. ii. 85,733; B.M.J. ii./98,1047.

Asthmatic fits, found to give more relief than an other drug, even in cases of weak heart.—M.P.C. i. 86,6. Solution 1 drop every 5 minutes.—Ed.M J 1890,552; Westminster Hosp. Rep., vol. vi. p. 47.

Its administration relieves morphine craving.—L. i. 87,1278; i./90,1334.

Paroxysmal headaches much improved and made le frequent.—L. ii./87,1135; i./88,1195 (tablets used).

In tinnitus aurium, doses of $\frac{1}{100}$ grain found useful.—Pr. xl.232.

Poisoning by eating two 'bobbins' of dynamite whic would be about 4 inches long by $\frac{3}{4}$ inch diameter.— ii./88,1102.

Nitroglycerin the most reliable agent in angin more especially graver cardiac cases.—Pr. xlvi.25 M.C. May,1891,132; L. i./90,240; B.M.J. ii./91,98

Nitroglycerin has the advantage over amyl nitri that it can be more readily used to keep up a stea diminution in blood pressure—chocolate tablets the best method—one to be broken up small and a piece taken every 10 or 15 minutes. Thus the action is never very great, but is constant.—Pr. xlvii.259.

Often of service in collapse of cholera.—L. ii./93,688.

Sciatica, obstinate cases cured by 5 to 10 drops, 3 times a day, of Solution of Nitroglycerin 1, Tincture of Capsicum 3, Peppermint Water 6.—Pr. lvi.221.

Gallstone colic immediately relieved by Nitroglycerin tablets.—L. i./96,353.

Dose in tablets may in exceptional circumstances be increased to $\frac{1}{4}$ grain with safety and advantage.—L.ii./96,634.

Nitrites generally, and the Nitrate Nitroglycerin, of service in angina. Solution 1 minim may be injected with ether in very acute cases. Effect of digitalis may be moderated by combining with nitroglycerin.—L. i./98,837; B.M.J. i./98,807.

Use in various forms of cardiac pain.—L. ii./99,1249.

Senile restlessness completely relieved by $\frac{1}{100}$ grain tablets.—B.M.J. ii./99,1542.

Cordite, which contains Nitroglycerin 58, Gun-cotton 37, and Mineral Jelly 5 per cent., has been taken from army rifle cartridges and eaten by soldiers, and produces violent headache, and in some cases leads to attacks of mania.—B.M.J.ii./03; L.ii./03,1137. May have been taken for malingering.—L.ii./03,1324.

NUX VOMICA (*Off.*).

Antidotes. *See* **Strychnine.**

Dose.—1 to 4 grains (0·065 to 0·26 Gm.) in powder.

The dried ripe seeds of *Strychnos Nux-vomica* contain from 0·7 to 1·5 per cent. of Strychnine. Determination of —P.J.ii./00,574.

Alkaloidal strength of powdered drug should be 2·5 per cent. C.U.D. Refers to total alkaloid. A standard of Strychnine would be better.

Methods of assay and results.—P.J.i./03,426; Y.B.P., 1903,158,160,161.

A menstruum of Amyl Alcohol 1, Chloroform 3, and Ether 4 is a useful solvent for the alkaloids in assaying.—P.J.ii./03,574. A little Amyl Alcohol added to the Strychnine residue prevents decrepitation in drying.

Extractum Nucis Vomicæ (*Off.*).

Dose.—¼ to 1 grain (0·016 to 0·065 Gm.) (but often less).

Is prepared from the liquid extract by distilling off the alcohol and adjusting the strength by the addition of milk sugar so that it contains 5 per cent. of strychnine.

Should be prepared by means of Alcohol 70 per cent., alkaloidal strength 16 per cent. C.U.D.; this refers to total Alkaloid, and is obviously not as satisfactory as the B.P. requirements.

In the official process for estimating the liquid extract which may be employed also for this solid extract, 2 hours is sufficient for the precipitation of the Strychnine Ferrocyanide if the temperature be maintained at 65° to 70° F. In the cold weather the Strychnine Ferrocyanide is not properly freed from the Brucine Salt by washing.—P.J.ii./00,214.

Extractum Nucis Vomicæ Liquidum (*Off.*).

Dose.—1 to 3 minims (0·06 to 0·18 Cc.).

Prepared by percolating the seeds in No. 20 powder with Alcohol (70 per cent.), and adjusting the strength so that the extract contains 1·5 per cent. of Strychnine.

By filtering the weak percolate in the official process after evaporating to ⅓ of its volume, the fat (2·6 to 4·7 per cent. in the seeds) should be removed. This will produce a tincture which will not deposit in the cold A No. 20 powder is the most suitable.—P.J.ii./01 667,672.

Further notes on method of estimation.—B. and C D. ii./98,633,731.

Tinctura Nucis Vomicæ (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.) (or ofte less).

Liquid Extract of Nux Vomica 2, Distilled Water 3 Alcohol (90 per cent.) *q.s.* to 12.

This contains not less than 0·24 or more than 0·2 per cent. of strychnine.

One ounce contains about one grain, or about doubl the quantity contained in the Tincture of B.P. 1885.

Strength should be 0·25 per cent., to be prepared b Alcohol 70 per cent. C.U.D. This figure is for tot alkaloid. One for Strychnine would be more sati factory.

Tablets are prepared equivalent to 5 and 10 minims of the official tincture.

Tinctura Ignatiæ.

Dose.—3 to 20 minims (0·18 to 1·2 Cc.).

From St. Ignatius' Beans, the seeds of *Strychnos Ignatii* (allied to Nux Vomica), 1 part, and a mixture of 90 per cent. alcohol 3 and water 1, *q.s.* to produce 10 parts. A preparation known as **Gouttes Amères de Baumé** (Codex), is of strength 1 in 2. *Dose.*—1 to 8 minims (0·06 to 0·48 Cc.)

Extractum Ignatiæ Amaræ Liquidum.

Dose.—1 to 10 minims. Standardised to contain 2 per cent. of Alkaloids by weight.

OLEATA.

Oleated Preparations.

Acidum Oleicum, Oleic Acid (*Off.*).

A pale-sherry-coloured oily liquid (at ordinary temperatures) with a slight odour, is faintly acid, insoluble in water but is dissolved readily by 90 per cent. alcohol, ether, chloroform, benzol, and fixed oils; it dissolves most metallic oxides, thus forming indefinite oleic solutions of oleates in an excess of Oleic Acid; such combinations of bismuth, copper, lead, mercury, and zinc are used medicinally; they are soluble in oils, fats, and petroleum ointments. Those of mercury and zinc are most in request; the former is now officially made by the double decomposition of Mercuric Chloride, and the latter of Zinc Sulphate with Hard Soap, forming incorrectly called 'true' oleates, which are less satisfactory than those made by the direct combination with the oxides. Oleic Acid also dissolves alkaloids, but not their salts, *e.g.* Oleate of Aconitine (see Aconitina, *p.*49), Oleate of Atropine (see Atropina, *p.*106), Oleate of Morphine (see Morphina, *p.*352), and Oleate of Veratrine (see Veratrina, *p.*519), are used medicinally. One part of Quinine (alkaloid) is dissolved by 3 of Oleic Acid forming **Oleatum Quininæ,** which is applied externally and is readily absorbed, and 8 grains (=2 grains of Quinine) added to one ounce of cod liver oil forms Oleum Morrhuæ cum Quinina. Oleic Acid, although a derivative of oils, is much more readily absorbed by the skin than oils. It also aids the absorption of drugs with which it is combined.

Capsules of Oleic Acid, contain 7½ minims.

These are given for hepatic colic, and to hinder the formation of gall stones one or two are taken daily—best in the morning on an empty stomach.

Oleanodyne.

A special preparation combining the alkaloids aconitine, atropine, morphine, and veratrine, with oleic acid. It is rapidly absorbed, and forms a strong anodyne liniment, which can be diluted with chloroform, alcohol, or oils. It is not so compatible with compound camphor or soap liniment.

Cupri Oleas, Copper Oleate.

Is best prepared by the double decomposition of a hot solution of copper sulphate, 3 in 8 of water, added to a hot solution of Castile soap 8 in 32, washing and drying the pasty precipitate. When cold it is in solid dark-green masses. It is in reality an oleo-palmitate of copper; may be employed as a plaster for warts and corns.

Unguentum Cupri Oleatis, U.C.H.

Copper Oleate 1, Lard 7. Melt together. May be made by using vaseline as the basis, and for some purposes it may be employed half the above strength.

Is specially useful in ringworm—lightly rubbed in night and morning,—for indolent ulcers, warts and corns, and is recommended for removing freckles.—M.R. 1882,449; P.J. 1882,303; L. i./83,250

Hydrargyri Oleas, Mercuric Oleate (*Off.*).

Hard Soap, in powder, 16, Oleic Acid 1. Mix, dissolve in boiling Distilled Water 88, and add Mercuric Chloride 8, dissolved in boiling Distilled Water 80. Boil the mixture for 10 minutes, decant, and wash the deposited mercuric oleate with hot distilled water until free from chlorides. Dry it on a water-bath. Is indefinite, being an oleo-palmitate of mercury.—P.J.i./01,392.

Is liable to turn brown.

The method of making in B.P. 1885 by acting on Mercuric Oxide with Oleic Acid gave better results, *v.p.*373.

Unguentum Hydrargyri Oleatis (*Off.*).

Mercuric Oleate 1, Benzoated Lard 3.

Hydrargyri Stearas, Mercuric Stearate.

A stiff white unctuous paste formed by the interaction of mercuric chloride and curd soap. Its other properties resemble those of the official mercuric oleate.

Emplastrum Hydrargyri Stearatis.

Lead Plaster 6, melt and add Mercuric Stearate 2. Is a useful substitute for mercurial plaster, and for strapping up joints requiring the constant application of Oleate of Mercury.

Oleatum Hydrargyri, B.P. 1885. 10 per cent.
i.e., of Mercuric Oxide employed to make it.

Yellow Mercuric Oxide 1, Oleic Acid 9. Into the acid, kept agitated in a mortar, sprinkle the oxide gradually, and stir frequently during 24 hours, until the latter is all dissolved and a light brown unctuous jelly is formed. Contains a large amount of free Oleic Acid.

Oleatum Hydrargyri (10 per cent.) **cum Morphina.**

Pure morphine, 1, is dissolved in 60 of the above. Linimentum Hydrargyri Oleatis cum Morphina, R.O.H. is similar.

Oleatum Hydrargyri, 5 per cent. (liquid), and 20 per cent. U.S. (unctuous). An efficient means of introducing mercury into the system.

Are prepared respectively with one-half and twice as much oxide as the 10 per cent., and when ordered with morphine 1 part is added to 60 parts of the oleate when dispensed. These preparations do not keep well with the morphine in combination. The 10 per cent. is always dispensed unless one of the others is specially ordered. These oleates should be applied with a brush, or lightly spread over the part with the finger, and covered with a linen rag or silk handkerchief; otherwise, if used with much friction, they may cause some cutaneous irritation. The addition of morphine is indicated where there is pain in the part, or the simple oleate itself causes much pain. The case and the age of the patient will indicate which strength of oleate should be used. As a rule, according to the size of the part affected, 10 to 30 drops, or a piece from the size of a bean to a nut, should be rubbed in twice a day for 4 or 5 days, then at night only, afterwards every other day till cured. The application does not salivate unless used in excessive quantity. In persistent inflammation, especially of glands, and joints (such as synovitis), and in non-ulcerated syphiloderma, the Oleates of Mercury are much more active, definite, and cleanly, than the mercurial ointment, which is dirty and uncertain.—L. i./93,1059.

In syphilitic affections it is most serviceable, being a certain and less disagreeable cutaneous application than ointments, and really hastens the subsidence of papules and other disfigurements of exposed parts of the skin; is also a very effective parasiticide in pediculi.

Syphilitic Disease of the Nervous System. As to the treatment with Potassium Iodide and Mercury, it is not advisable to give these together in full doses, except in a very urgent case. A drachm of the 10 per cent. oleate should be rubbed in twice daily for three or four days, and then once daily for remainder of the week. Should be rubbed in as near the affected part as possible—near the scalp if in the brain, and down the back if in the spinal cord; treatment to be brief—to last eight weeks or so, and be renewed after two, four or six months.—Gowers, B.M.J. i./03,773.

Cases of ringworm have been cured by 10 per cent. Oleate. It is a certain, painless remedy, produces no stain, and it destroys the fungus, as it readily permeates the sebaceous glands, hair follicles, and even the hairs themselves. Its penetrating power may be increased by adding one-eighth of ether.

Ringworm of scalp—the most inveterate cases which had existed for years cured by Oleate of Mercury, 5 per cent. for under 8 years, 10 per cent. for over that age; one-seventh of acetic ether added to it, increases its penetrating power, causes little pain.—L. i./80,126.

It is also found useful in alopecia areata.

Emplastrum Plumbi. *Syn.* DIACHYLON PLASTER.

Lead Plaster *(Off.)* is a crude Oleate of Lead, made by the combination of olive oil (oleate and palmitate of glyceryl) and oxide of lead heated together in the presence of water. Thus made, the oleate possesses more adhesiveness than when prepared by the oleic acid solution of the oxide.

This is used as an abortifacient in the Midland Counties with some success.

Emplastrum Resinæ is lead plaster with the addition of resin and soap; **Emplastrum Saponis** is similar, with less resin, and is therefore less adherent.

The following ointment was largely prescribed by Hebra for eczema, excessive perspiration of the feet, &c.

Unguentum Diachyli, P. Aus. Add.

Lead Oxide, in fine powder, 25, Olive Oil 50, Lard 50. Boil together, sprinkling in water at intervals until the oxide is saponified and the water evaporated. When cold, add Oil of Lavender 2.

Unguentum Diachyli (original formula).

Olive Oil 60 parts, Boiling Water 128 parts; heat, and add gradually, Litharge in powder 15 parts. Continue the heat, adding more water if necessary, and stir constantly till combined, and until cold. Then add Oil of Lavender 1 part. In cold weather an extra ounce of oil should be allowed for every pound of ointment. It should be rubbed in 1 to 3 times a day, or spread on linen and applied as a plaster. Modified as

Unguentum Plumbi Oleatis, U.C.H., Unguentum diachylon, P.G.iv.

Lead Plaster, Olive Oil, equal parts (by weight), melted together.

Unguentum Diachyli, B.S.H.

Lead Plaster 1, Vaseline (Soft Paraffin, yellow, G.H.) 1.

Melt together and stir till cold. Made thus, the ointment keeps well, and does not acquire a disagreeable odour. Kaposi (son-in-law of Hebra) has adopted this, when perfumed with oil of bergamot, as *Unguentum Vaselini Plumbicum.*

With the addition of 2 per cent. of phenol this ointment forms *Unguentum Diachyli Carbolisatum* (Lassar).

Oleatum Zinci, B.P. 1885.

Zinc Oxide 1, Oleic Acid 9. Mix and heat together till combined. Diluted with an equal quantity of Soft Paraffin, this formed **Unguentum Zinci Oleati** (B.P. 1885).

Chartazinc.

Tissue paper impregnated with zinc oleate; this hastens the healing process and is a healthy stimulant to chronic ulcers, especially those of long standing, and large sores left after burns.

Unguentum Zinci Oleatis (*Off.*).

Precipitated Zinc Oleate (see below) 1, Soft Paraffin, white, 1. Melt together and stir till cold. For some cases further dilution with vaseline is advisable. This ointment, having the zinc in solution, has the advantage over zinc ointment B.P., in most cases in which the use of this is indicated, in not coating the sore, to which it is applied, with a crust of débris, which checks healing and irritates the part on removal.

In making the official ointment it is better to press the oleate dry rather than heat on water bath.—P.J. i./02,175.

Chronic eczema is curable with this ointment.

Unguentum Oleatorum, G.H.

Zinc Oleate Ointment 2, Diachylon Ointment 2, Mercuric Oleate Ointment 2.

Zinci Oleas.—*Syn.* ZINC OLEO-STEARATE.

Hard Soap in shavings 16, Boiling Water 120; apply heat till dissolved. [If made with a soap the fatty acid of which has a fairly high melting point, 44° C. or thereabouts, *c.f. p.*470, the product keeps better.] Zinc Sulphate 8, Boiling Water 16; dissolve and add to former solution; stir well, separate the water from the Oleate floating on the top, and wash the latter with hot water till free from sulphate, cool, and dry. Reduced to powder it resembles powdered French chalk in appearance, and is useful for dusting on eczematous surfaces and parts troubled with excessive perspiration. It may be perfumed by the addition of $\frac{1}{500}$ of thymol, and diluted with kaolin or starch. It is *the* remedy for hyperidrosis and osmidrosis.

OLEUM GYNOCARDIÆ, I.C. Add.

Chaulmoogra Oil.

Dose.—5 to 10 minims (0·3 to 0·6 Cc.), gradually increased to 1 drachm (3·5 Cc.) in capsules, cod-liver oil, or milk.

The oil expressed from the seeds of *Gynocardia odorata,* imported from India. It has a pale brownish colour and a disagreeable taste and smell. It is always solid and unctuous in this climate, as it contains a quantity of palmitic acid, with three other fatty acids; of these **Gynocardic Acid** is supposed to be the active ingredient; this causes it to give a reddish-brown coloration, changing to green with sulphuric acid. *Dose.*—½ to 3 grains (0·032 to 0·2 Gm.). The oil is applied externally, and given internally *after meals* for leprosy, phthisis, scrofula, marasmus, psoriasis, and lupus. For chronic rheumatism and rheumatic gout it forms a useful application with gentle friction. For phthisis 2 to 4 ounces should be rubbed into the chest weekly.

For leprosy it is better to give half-an-ounce per rectum daily so as to avoid irritation of the stomach.

The subcutaneous use is effective (but painful) for leprosy.—B.M.J.E. ii./01,79.

In old standing eczema, with thickening of the skin, applied pure or as an ointment was useful.—Pr. xxvi.55.

Gynocardic Acid has also been used internally for leprosy with good results.—B.M.J.E. i./92,28.

As also the oil.—L. ii./02,1196.

Capsules of Gynocardia Oil contain 5, 10 and 20 grains.

Unguentum Gynocardiæ, I.C.Add. *v.p.*xxii.

Hard Paraffin 4, Soft Paraffin 5; melt and add Gynocardia Oil 1; stir till cold.

OLEUM MORRHUÆ (*Off.*).

Dose.—1 to 4 drachms (3·5 to 15 Cc.).

The oil is separated from the livers by means of steam at a temperature not exceeding 82° C. It is then cooled to a temperature of 5° C. and the liquid portion, producing the "non-freezing" oil of commerce, is pressed through canvas. Inferior brands are prepared by heating. The chief constituents are now believed to be Jecolein and Therapin, Glycerides of Jecoleic Acid and Therapic Acid, the former being an unstable compound.—Ph.

Genuine oil, whether of Newfoundland or Norwegian manufacture, should in addition to the official requirements produce a vivid salmon pink colour not darkening to any great extent on standing when stirred on a white tile with a mixture of Sulphuric and Nitric Acids.—P.J. ii./03,840.

Capsules contain $\frac{1}{2}$ or 1 drachm. *Dose.*—1 or more.

Capsules of Cod Liver Oil 19 minims and Creosote 1 minim are for use in phthisis.

Emulsio Olei Morrhuæ, B.P.C.

Dose.—2 to 8 drachms (7 to 30 Cc.).

Cod Liver Oil...	8 ounces.
The Yolks of Two Eggs.	
Tragacanth, in powder ...	16 grains.
Elixir of Saccharin	1 drachm.
Simple Tincture of Benzoin ...	1 drachm.
Spirit of Chloroform	4 drachms.
Essential Oil of Bitter Almonds	8 minims.
Distilled Water ...	*q.s.* to 16 ounces.

Measure five ounces of water, place the tragacanth in a dry mortar, and triturate with a little of the cod-liver oil; then add the yolks of eggs, and stir briskly, adding water as the mixture thickens. When of a suitable consistence, add the remainder of the oil and water alternately, with constant stirring, avoiding frothing. Transfer to a pint bottle, add the other ingredients, previously mixed, shake well, and add water, if necessary, to produce 16 ounces.

Emulsio Olei Morrhuæ et Hypophosphitum.

Dose.—2 to 8 drachms (7 to 30 Cc.). Contains Hypophosphites of Sodium and Calcium, of each 1 per cent.

Lofotol is Cod Liver Oil charged with carbon dioxide, and so is effervescent; it is said to be less prone to oxidation and rancidity; it is very palatable and digestible.—C.D. ii./02,882; B.M.J. ii./02,1657; L. ii./02,1703.

Cod Liver Oil Substitutes. *See* **Maltolivine, Marrubin, Oleum Olivæ cum Acido Oleico, Mistura Olei Olivæ.**

Dermosapol. A superfatted soap made with Cod Liver Oil 50 per cent., Peruvian Balsam, Glycerin, Wool Fat and Alkali. Is medicated with Potassium Iodide or Mercury, Iodoform, Formaldehyde, &c.

OLEUM OLIVÆ. (*Off.*).

Dose.—¼ to 1 ounce (7·5 to 30 Cc.).

The oil expressed from the ripe fruit of *Olea europæa.*

Inferior brands are obtained by addition of the pulpe fruit to boiling water and by fermentation processes.

Capsules (Gelatin) of Olive Oil, each containing ½ and 1 drachm.

These capsules are also prepared **Keratin-coated** for lubricating the intestines in cases of habitual constipation.

Oleum Olivæ cum Acido Oleico.—*Syn.* LIPANIN.

Dose.—1 to 2 drachms (3·5 to 7 Cc.)

An addition of 5 per cent. of Oleic Acid to Olive Oil is recommended to render the oil more easily assimilated—to replace cod liver oil. Is flavoured with essential oil of almonds.

Olive oil in ½ to 2-ounce doses has been recommended for the treatment of gastric ulcer. It is said to inhibit the secretion of hydrochloric acid. Hyperchlorhydria is generally associated with gastric ulcer. The oil may be administered by the stomach tube if necessary, or in the form of **Mixture** or **Capsules**, or as **Oleum Olivæ cum Acido Oleico** above.

Mistura Olei Olivæ. *Dose.*—1 to 2 ounces.

Olive oil 1 ounce, tragacanth powder 25 grains, simple syrup ½ ounce, water to 4 ounces.

Maltolivine

Dose.—2 to 4 drachms (7 to 14 Cc.).

A combination of Olive Oil and Malt Extract. Is recommended as a substitute for Cod Liver Oil. Is palatable, cheap, and of considerable value as a nutrient n marasmus, rickets, and emaciated and wasting conditions in children.

OLEUM RICINI. (*Off.*).

Dose.—1 to 8 drachms (3·5 to 30 Cc.).

Expressed from seeds of *Ricinus communis*, soluble in 5 of Alcohol (90 per cent.). The seeds, but not he oil, contain the poisonous proteid **Ricin** and the purgative principle **Ricinone**.

Capsules of Castor Oil contain ½ or 1 drachm.

Capsules of Castor Oil, Compound, contain Croton Oil ¼ minim, with Castor Oil 8 minims. *Dose.*—One or two.

Mistura Olei Ricini, Castor Oil Mixture. (*Off.*

Dose.—1 to 2 ounces (30 to 60 Cc.).

Castor Oil 6, Mucilage of Gum Acacia 3, Orange Flower Water (undiluted) 2, Cinnamon Water 5.

To the mucilage contained in a mortar add alternately, in portions, the castor oil and the mixed waters with constant trituration.

An agreeable dose, the oil being made more active b emulsification.

Castor Oil Solutions of Alkaloids.

Instillation of Castor Oil to the eye allays the irritation caused there by foreign bodies. For this reaso also it is employed for making alkaloidal solutions fo oculists' use. The bases (but not their salts) are solubl in fixed oils, and for mydriatic, as well as myoti purposes, the Castor Oil solutions of some have prove very useful. A 2 per cent. solution of the combine bases Homatropine and Cocaine in it has been of grea service (*p.*108). A 2 per cent. solution of Euphthalmin and 1 per cent. solutions respectively of Atropine Atroscine, Cocaine, Duboisine, Gelsemine, Homatropine Hyoscine, Hyoscyamine, Pilocarpine and Scopolamin have also been used. Physostigmine (Eserine) is used i ½ per cent. solution. Morphine is barely soluble in it t the extent of ½ per cent. Castor Oil will dissolve a much as 4 per cent. of Cocaine.

Mistura Antiseptica, U.C.H.

Solution of Mercuric Chloride (*off.*) 1 minim, Casto Oil Mixture 1 drachm. For infantile diarrhœa.

Sodii Sulphoricinas, prepared by the action i the cold of sulphuric acid on castor oil, washing an nearly neutralising the product with soda, is used in th form of suppository as a purgative; ricinoleate of magnesium found unsatisfactory internally.—P.J.1895,70

Laxol. An American preparation said t consist o Castor Oil flavoured with Saccharin and Peppermint Oi

Phenol Sodio-Sulphoricinate. A mixture phenol and sodium sulphoricinate, is a yellowish brow thick syrup miscible with water. Used in 20 to 50 pe cent. solution for papilloma and tuberculosis of laryn and ozœna.—P.J. ii./00,305; Munchen. Med. Woc 01,1112.

OLEUM ROSÆ.

Syn. **Otto** (*Off.*) **or Attar of Rose.**

Distilled from the fresh flowers of *Rosa damascen* Sp. Gr. 0·856 to 0·860 at 86° F. Congealing and mel ing points should lie between 67° and 72° F. Mixe with an equal volume of chloroform it does not congeal and is convenient for use.

It contains 70 to 75 per cent. of Geraniol (three quarters of the liquid portion) and Citronellol (the remaining quarter). The solid stearoptene is odourless.

The average yield of oil is about 1 from 3,000 of rose petals.—Ph.

Aqua Rosæ (*Off.*).—*Syn. Eau de Rose.* *Dose.*—1 to 2 ounces (30 to 60 Cc.) of the diluted water.

Should be diluted with twice its volume of distilled water immediately before use.

Mistura Rosæ Laxativa, G.H. *Dose.*—1 ounce.

Magnesium Sulphate 40 grains, Pimento Water 2 drachms, Acid Infusion of Roses to 1 ounce.

Pulvis Rosæ Compositus. *Dose.*—Ad libitum.

Oil of Rose and Chloroform of each 1 (or combined 4 drops), Acacia 145 (grains), Sugar 840 (grains), Solution of Carmine 13 (drops). Useful as an agreeable diluent for powders such as Calomel, Grey Powder and Jalapin, also as a colouring and flavouring agent in mixtures—¼ or ½ ounce in 6 ounces.

Unguentum Aquæ Rosæ (*Off.*).—*Syn.* CERATUM GALENI; COLD CREAM.

White Beeswax 45, Spermaceti 45, Almond Oil 270. Melt together; add gradually, with constant stirring, Rose Water (*Eau de Rose*) 210, and while cooling, Oil of Rose ½, stir till cold.

OLEUM SANTALI. (*Off.*), P.G. iv.

With some Notes regarding Copaiba and Cubebs.

Dose.—5 to 30 minims (0·3 to 1·8 Cc.).

The oil distilled by steam under pressure from the wood of *Santalum album*, the yield being from 1 to 6 per cent. Consists principally of Santalol. A yellowish iquid, with a somewhat roseate odour, and an aromatic itterish, slightly acrid taste. Is much employed in he treatment of gonorrhœa and gleet. It quickly hecks the discharge in dose of 15 minims 3 times day, and in conjunction with the use of iodoform nd eucalyptus bougies gives good results; also in 0-minim capsules, for chronic cystitis, with benzoic cid and boric acid as adjuvants.

Capsules of Santal Oil are prepared, containing 5, 10, 15 and 20 minims in each. **Gonal Capsules** are similar.

Those known as **Savaresse's Capsules** contain 10 minims, and are prepared with an animal membrane and are claimed to be less nauseating, as they generally remain entire until they have passed through the stomach.

Capsules of Copaiba contain 5, 10, and 15 minims capsules of **Copaiba and Santal Oil** of each 5 minims; also **Oil of Cubebs and Santal Oil** of each 5 minims; also **Copaiba and Cubeb Oil** of each 10 minims, and of each 5 minims. **Copaiba** (the oleo-resin, *Off.*) is obtained from the trunk of *Copaifera Lansdorfii* and other species. Should be distinguished from Oleum Copaibæ (*Off.*) which is distilled from it, and constitutes at leas 40 per cent. of the oleo-resin.

Mistura Olei Santali. *Dose.*—One ounce (30 Cc.).

Oil of Sandalwood 4, Tragacanth, in powder 1. Mix and add quickly Water to 128. Shake well. Aromatic water with syrup may be used.

Gelatinum Copaibæ, Copaiba Jelly.

Dose.—The size of a filbert in wafer paper.

Copaiba (*Off.*) 8 ounces, Sugar in powder 4 ounces Clear Honey 4 ounces, Distilled Water 5 drachms, O of Peppermint 1 drachm, Roseine $\frac{1}{10}$ grain dissolved i water 20 minims. Mix the first four ingredients in water-dish, heat gently, stirring all the time until th mixture boils, and continue to stir until a jelly is formed cool somewhat, and add the peppermint and colouring.

Liquor Copaibæ, Soluble Copaiba.

Dose.—$\frac{1}{2}$ to 1 drachm well diluted.

Copaiba 18, Solution of Potash 40. Boil for 1 minutes, transfer to a bottle and set aside to clarify then syphon off the clear liquor from the supernatan oily portion and the sediment,

Mistura Copaibæ, U.C.H.

Copaiba 30 grs., Solution of Potash 12 m., Cinnamo Water to 1 ounce. *Dose.*—$\frac{1}{2}$ to 1 ounce.

Liquor Copaibæ cum Buchu et Cubeba.

Dose.—1 to 2 drachms, well diluted.

Buchu in powder 5, Cubebs in powder 2, Alcohol (60 per cent.) *q.s.* Percolate and press to obtain 14. Mix 1 part with 2 of Soluble Copaiba.

Liquor Santali cum Buchu et Cubeba.

Dose.—1 to 2 drachms.

Yellow Santal Wood in powder 4, Buchu in powder 1, Cubebs in powder 1, Alcohol (60 per cent.) *q.s.* to moisten. Macerate 2 days and percolate with more alcohol and press to obtain 20.

Liquor Santali Compositus.

Dose.—1 to 2 drachms.

Mix 2 volumes of Soluble Copaiba with 1 of the last preparation.

Liquor Santal cum Kava. *Syn.* GONOSAN.

Dose.—1 to 2 drachms (3·5 to 7·0 Cc.).

Yellow Santal Wood in powder 4, Alcohol 60 per cent. *q.s.* to 15, Kava Kava Extract Liquid 5 (*v.p.*533). Is used in gonorrhœa, and is said to suppress the ardor urinæ and tendency to chordee, to increase the output of urine and to reduce pus.

Gelatin capsules are prepared. *Dose.*—2 capsules 3 or 4 times a day.

OPIUM (*Off.*).

Dose.—½ to 2 grains (0·032 to 0·13 Gm.).

The inspissated juice obtained by incision of the capsules of *Papaver somniferum* (from any geographical source). The Turkey product is best suited for pharmacy. Persian and Indian contain a large proportion of narcotine.

For galenical preparations generally it must contain, when dried and powdered, between 9·5 and 10·5 per cent. of anhydrous morphine; for the Tincture and Extract not less than 7·5 per cent., these being standardised when prepared.

The B.P. method of estimating, modified.—The difficulty of obtaining the 104 Cc. of filtrate is obviated. The Ether is not removed before collecting the precipitate on the filter, but after. Back-titration is conducted with $\frac{N}{10}$ Soda, after dissolving the Morphine in $\frac{N}{10}$ Acid, and this without drying. In estimating the tincture an error is pointed out—after treating 80 Cc. with lime, &c., it should be made up to 81·9, and not to 85 Cc. A table is given showing the equivalents of Morphine to $\frac{N}{10}$ Sulphuric Acid.—P.J. ii./03,909. Dott's criticism of this method.—P.J. i /04,7.

Ash should not exceed 4 to 8 per cent., moisture about 12 per cent., 64 per cent. of its weight should be water, soluble.—Ph.

The powder should be dried at 60° C., and Morphine strength to be 10 per cent.—C.U.D.

For the chemical principles of opium used in medicine —**Morphine** and **Apomorphine, Codeine** and **Apocodeine, Narceine** and **Narcotine,** see their respective headings. These alkaloids occur chiefly combined with Meconic Acid of which about 5 per cent. is usually present; this acid has no therapeutic action.

Estimation of Narcotine and Codeine in Opium. Asia Minor Opium contained 2·8 to 5·84 per cent. of Narcotine and 1 to 1·3 per cent. of Codeine. Persian contained 8 per cent. of the former and 1 to 1·5 per cent. of the latter.—Y.B.P. 1903.122.

Antidotes. *See* Morphine *p*.352.

Strychnine is a valuable remedy for opium poisoning. —B.M.J. i./99,1534.

Confectio Opii, B.P. 1885.

Dose.—5 to 20 grains (**0·32 to 1·3 Gm.**).

Compound Powder of Opium 1, Syrup, by weight, 3 Contains Opium 1 in 40.

Emplastrum Opii (*Off.*). 1 in 10 of Resin Plaster.

Extractum Opii (*Off.*).

Dose.—¼ to 1 grain (**0·016 to 0·065 Gm.**).

An aqueous extract standardised to contain 20 per cent. of morphine (*Off.* and C.U.D.).

Extractum Opii Liquidum (*Off.*).

Dose.—5 to 30 minims (**0·3 to 1·8 Cc.**).

Extract of Opium 0·75, Distilled Water 16, Alcohol (90 per cent.) 4. Is of same strength as Tincture of Opium, containing 0·75 per cent. of morphine. Resembles Battley's *Liquor Opii Sedativus.*

Linctus Opiatus. St. Th. H.

Dose.—Tincture of Opium 2 minims, Linctus St.Th.H (below) to 1 drachm.

Linctus. St. Th. H.

Oxymel Scillæ 15, Mucilage Tragacanth 15, Glyceri 15, Emulsion of Chloroform 3, Syrup to 60.

Linctus Scillæ Opiatus —*Syn.* **Linctus Camphoræ Compositus. St. Bart's. H.**

Dose.—1 drachm (3·5 Cc.).

Compound Tincture of Camphor, Oxymel of Squill, and Syrup of Tolu, equal parts.

Brompton H. uses Syrup of Squill *vice* Oxymel in this formula for **Linctus Tolu cum Opio.**

Linimentum Opii (*Off.*).

Tincture of Opium 1, Liniment of Soap 1; filter after a few days.

Linimentum Opii Ammoniatum, B.P.C.

Soap Liniment, Compound Camphor Liniment, Tincture of Opium, of each 6; Belladonna Liniment, Strong Solution of Ammonia, of each 1. Mix and filter. (Better to stand a week before filtering.) Is said to resemble Bow's Liniment.

Pilula Plumbi cum Opio (*Off.*).

Dose.—2 to 4 grains (0·13 to 0·26 Gm.).

Lead Acetate 6, Opium 1, Syrup of Glucose ⅔ or *q.s.*

Pilula Saponis Composita (*Off.*).

Dose.—2 to 4 grains (0·13 to 0·26 Gm.)

Opium 1, Hard Soap 3, Syrup of Glucose 1.

Pulvis Cretæ Aromaticus cum Opio (*Off.*).

Dose.—10 to 40 grains (0·65 to 2·6 Gm.).

Contains Opium 1 with 39 of Pulvis Cretæ Aromaticus. (*Dose.*—10 to 60 grains (0.65 to 4·0 Gm.) is the old "Aromatic Confection.")

Tablets of both these preparations, 5 grains (0·32 Gm.).

Pulvis Kino Compositus (*Off.*). 1 of Opium in 20.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

Pulvis Opii Compositus, B.P. 1885.

Dose.—2 to 10 grains (0·13 to 0·65 Gm.).

Opium 3, Black Pepper 4, Ginger 10, Caraway Fruit 12, Tragacanth 1. Contains 1 of Opium in 10.

Solubes Plumbi et Opii represent:—

Lead Acetate 2 grains, Opium Tincture 20 minims For dilution with warm water 5 ounces, more or less according to the purpose required.

Suppositorium Plumbi cum Opio (*Off.*).

Lead Acetate 3, Opium 1, Oil of Theobroma *q.s.* In grains for one suppository, in grammes for fifteen.

Tablets of Opium ½ and 1 grain.

Tinctura Camphoræ Composita.—*Syn.* PAREGORI (*Off.*). Is also known on the Continent as Tinctu Opii Benzoica. *Dose.*—$\frac{1}{2}$ to 1 drachm (1·8 t 3·5 Cc.).

Tincture of Opium 585 minims, Benzoic Acid 4 grains, Camphor 30 grains, Oil of Anise 30 minim Alcohol (60 per cent.) *q.s.* to 1 pint. One drachm= about $\frac{1}{4}$ grain opium.

Should contain 0·05 per cent. Morphine. (*Off.* an C.U.D.).

Tinctura Opii.—*Syn.* LAUDANUM (*Off.*).

Dose.—20 to 30 minims (1·2 to 1·8 Cc.), or 5 to 1 minims (0·3 to 0·9 Cc.), repeated.

Opium 3, rub to a paste with Distilled Water 200° F., 10; set aside for 6 hours, add Alcohol (90 pe cent.) 10; again set aside for 24 hours, strain, press and after 24 hours filter the product, which is to b standardised to contain 0·75 per cent. of anhydrou morphine, by the addition of a mixture, in equ volumes, of Alcohol (90 per cent.) and Distilled Wate It is thus equal in strength of morphine to *Liquo Morphinæ Hydrochloridi* (3 of alkaloid=4 of salt but containing, in addition, the other alkaloids is mor soporific.

Should be 10 per cent. strength prepared by percol tion with alcohol 70 per cent., and should contain 1 pe cent. of morphine.—C.U.D.

For estimation, see note under Opium, *p.*383.

Tablets representing Tincture of Opium 5 and 1 minims are prepared.

Tinctura Opii Ammoniata (*Off.*).—*Syn.* SCOTC PAREGORIC.

Dose.—$\frac{1}{2}$ to 1 drachm (1·8 to 3·5 Cc.).

Tincture of Opium 3 ounces, Benzoic Acid 180 grain Oil of Anise 1 drachm, Solution of Ammonia 4 ounces Alcohol (90 per cent.) *q.s.* to 1 pint when filtered. On ounce contains $\frac{1}{2}$ grain anhydrous morphine.

Trochisci Opii, B.P. 1885.

Contained $\frac{1}{10}$ grain Extract of Opium in each, wit liquorice. **Trochisci Sedativi, T.H.**, contain th same quantity with fruit basis, and are marked 'S.'

guentum Gallæ cum Opio.
Contains 7·5 per cent. of Opium with Gall Ointment
lls 1, Benzoated Lard 4).
Collapsubes' (*v.p.*217) with rectal tube are pre-
ed for use in hæmorrhoids.

num Opii, B.P. 1885.
Dose.—10 to 30 minims (0·65 to 1·8 Cc.)
Contained 1 of Extract in Sherry 20, with Aromatics.

PANCREAS.

n the pancreatic juice of man four distinct digestive
nents are believed to be contained, viz. :—

1. **Trypsin.**—A proteolytic ferment acting in an alkaline medium.
2. **Amylopsin or Pancreatic Diastase.**—Converts starch into maltose.
3. **Steapsin.**—A lipolytic ferment.
4. **A Milk-curdling Ferment.**

For invalids, aged persons, and those suffering from
ak digestion, or those prostrated by fever or exhaus-
n, preparations of the pancreas of the pig (an omnivorous
mal) may be employed, by means of which food may be
tially or wholly digested previous to administration ;
ir nutrition is thus maintained, and the stomach has
e to regain its wonted powers of digestion.

tractum Pancreatis.
An American preparation, is sold in three forms :—
The powder put up in ¼-ounce and 1-ounce bottles.
Tablets of Extractum Pancreatis weighing 3 grains.
se.—One or two, an hour or so after meals.
Peptonising powders in glass tubes, these are used
peptonising milk, gruel, &c.

ncreatinum, Pancreatin, U.S.
Dose.—2 to 4 grains (0·13 to 0·26 Gm.).
A yellowish or greyish white amorphous powder,
nost completely soluble in water, insoluble in alcohol,
isisting of a mixture of the enzymes of the pancreas,
ained usually from the hog. It digests albuminoids
l converts starch into sugar in an alkaline medium.
A desiccated preparation of the Pancreas, mixed with
wdered malt, is prepared in England and sold as
ncreatine. *Dose.*—2 to 4 grains. It is very

hygroscopic ; if carefully prepared contains the activ principles of the Pancreas.—Proc. Roy. Soc. xvi.209.

Pancreatine Tablets, 2½ grains, with Sodium Bicarbonate, are prepared. One is sufficient to peptonise half a pint of milk.

Liquor Pancreatis, Pancreatic Solution (*Off.*) *Dose.*—1 to 2 drachms (3·5 to 7 Cc.).

Fresh pancreas of the pig, freed from fat and external membrane, and divided by trituration with washed sand or pumice-stone, 1, Alcohol (20 pe cent.) 4, Macerate for seven days and filter.

The pancreas is sometimes called the 'sweetbread. but the sweetbread known to cookery is the thymu gland, and *not* the pancreas, which, being tough an stringy, is inferior in value to the sweetbread of th throat.—Ph.

Liquor Pancreaticus (Benger's).

Similar to above.—Proc. Roy. Soc. xxxii.145.

These solutions possess the amylolytic or diastasi properties of converting starch into dextrin and suga (maltose and dextrose), and the proteolytic or trypti action of converting albumen and fibrin into peptone and of first curdling and then peptonising milk.

Dose.—1 to 2 drachms (3·5 to 7 Cc.) in water wit meals, or mixed with food, such as farinaceous gruel bread-and-milk, or arrowroot, when cool enough to sip or, when given to aid intestinal digestion, 1 or 2 drachm in water with a pinch of sodium bicarbonate 2 or 3 hou after a meal. As an addition to nutritive enemata, dessertspoonful should be added to beef tea or milk gru just before its administration. Liquor Pancreatis wi not keep diluted, and a temperature much over 140° destroys the ferment, which does not act in an ac medium.

Peptonised Milk.

Mix two-thirds of a pint of fresh milk with on third of a pint of water, and warm in a saucepan to temperature of about 140° F. (or the diluted milk m be divided into two equal portions, one of whi may be heated to the boiling point and then add to the cold portion, the mixture will then be the required temperature). Add two teaspoonfuls Liquor Pancreatis, and half a level teaspoonful sodium bicarbonate. Pour the mixture into a covered jug and place in a warm situation for ten to twenty minutes, then boil the product. It can then be kept and used like ordinary milk.

Pilula Pancreatica (Benger).

Dose.—One after meals. Suggested in pancreatic diabetes, where the glycolytic or sugar-destroying ferment in the blood, normally furnished by the pancreas and other glands, fails. The pills are keratined to carry them through the stomach intact.—L. i./92, 535,904,961.

Pancreatic juice diminishes sugar in diabetic urine.—B.M.J.E. ii./93, 72.

Peptonised Beef Jelly (Benger).

An extract of beef containing much of the fibrin converted into peptone or partially digested by pancreatic trypsin. May be taken by teaspoonfuls as a restorative for invalids and the aged. Is supplied in glass jars.

Peptonised Chicken Jelly (Benger) is also manufactured similarly, and put up in glass jars.

Pancreatic Emulsion.

Prepared by mixing and pounding the pancreas of the pig with lard and water, straining, and exhausting the strained substance with ether. The ether forms a solution of pancreatised fat. From this the ether is distilled, and the fat mixed with a mixture of rectified spirit and water (1 to 3) and emulsified by agitation. Oil of cloves is added to flavour and preserve it.

Dose.—1 to 3 drachms, in a little milk or water, with a little spirit added, if liked, once or twice a day 1 or 2 hours after a meal. Given in consumption and other wasting diseases attended with loss of power to digest and assimilate food, especially where fats and cod-liver oil do not agree with the stomach.

Pancreatised Farinaceous Food (Benger's).—Wheat flour, partially dextrinised by dry cooking, is impregnated with an extract of pancreas; is suitable for infants and invalids; when mixed with milk or milk and water, artificial digestion of the food and milk takes place, which can be checked at any point by boiling.

Pulvis Pancreaticus Alkalinus (Benger).

Twenty grains in glass tubes. Consists of pancreatic enzymes mixed with sodium bicarbonate, one being sufficient to peptonise a pint of milk in from 10 to minutes, according to the amount of predigesti required.

Trypsin. *Dose.*—8 to 20 grains (0·5 to 1·3 Gm
This ferment exists in the form of whitish powd possessing an odour like pepsin. It changes proteids i peptones in alkaline media. One part should pepto in $1\frac{1}{2}$ hours about 100 parts of coagulated egg album It is employed for peptonising milk, and to assist dig tion in diabetes. May be given in keratin-coated pil

Milk, Artificial Human (Frankland).
Add to $\frac{2}{3}$ pint new milk, the cream removed fr another $\frac{1}{3}$ pint after standing 12 hours. Curdle thi pint of skimmed milk with a square inch of rennet contact for five to fifteen minutes. Break up the c frequently, and separate the whey, which heat to boil point, removing the casein which is thus separa Dissolve 110 grains Milk Sugar in the hot whey, mix it with the $\frac{2}{3}$ pint milk containing the cream of other $\frac{1}{3}$ pint. The artificial milk should be used wit 12 hours of its preparation, and the same piece of re will serve for weeks. B.M.J. ii./93,822.

Preparation of milk for infant feeding, by the addi of oatmeal, butter, and milk sugar to diluted c milk.—P.J. 1889,3.

Simpler formula:—New Milk 30, Cream $1\frac{3}{4}$, Sugar $1\frac{1}{8}$, Water 18; with instructions for sterilizin P.J. 1892,652. See also P.J., 1893,785,346.

Artificial Human Milk is now sold in bottles, tially pancreatised and sterilised.

Ortho-Methyl-Amino - Phenyl - Sulphate, **Ortol** (which is a mixture of this body with Q and is used in photography) are recommended for testing. One drop of a 1 per cent. solution is adde the specimen and followed by 1 drop of weak Per of Hydrogen solution. Raw milk, or milk that ha been heated above 75°C. gives a reddish pink colo —L. ii./03,24.

The **Pasteurisation of Milk**—so-called " lizing"—consists in raising it to the temperatu 70°C. (158°F.) and maintaining it at this temper for 30 minutes.

PAPAIN.

Syn. PAPAYOTIN. (But this term is sometimes pplied to the crude powder produced by drying the ice, otherwise known in commerce as dried Papaw ilk. Dose of this, 3 to 10 grains (0·2 to 0·65 Gm.).

Dose of Papain.—1 to 8 grains (0·065 to 0·52 Gm.).

A white or whitish, amorphous, slightly granular wder, prepared from the juice of the Papaw, *Carica apaya.* 75 per cent. should be dissolved by absolute cohol. It acts in acid, alkaline, or neutral media, has e property of digesting fibrin like pepsin, and its action not checked by carbolic acid.—B.M.J. ii./91,1318; ii./00,327.

Method of manufacture of the crude article in Montrrat.—C.D. i./04,185.

Is a vermifuge specially destructive to ascarides.

lixir Papain.

Dose.—1 drachm (3·5 Cc.) with meals.

lycerinum Papain.

Dose.—1 drachm (3·5 Cc.) with meals.

Glycerin slightly acidulated with hydrochloric acid, solvent for papain, and forms a useful mode of adnistration.—C. & D. ii./00,170. It may be used as pigment for chronic eczema, warts and indurated n, and has been applied to diphtheritic exudation. A ong solution will remove tattoo marks.—B.M.J.E. 98,36.

Tablets, 2 grains (0·13 Gm.). *Dose.*—1 or more.

rochisci Papain ($\frac{1}{2}$ gr.)—With meals for dyspepsia.

rochisci Papain ($\frac{1}{5}$ gr.) **et Cocainæ** ($\frac{1}{10}$ gr.)

These, if slowly sucked, are useful for ulcers, warts or sores on tongue, &c.

Papain will peptonise 200 times its own weight of ssed fresh blood fibrin.

Ulcers and fissures of tongue painted with a solution Papain 1 to 2 in 10 each of glycerin and water ommended.—L. ii./93,26.

Useful in chronic cases of indigestion and dyspepsia, h acid eructations and painful gastric fermentation. Pr. xli.201; L. i./95,1050.

ænia expelled by papain in repeated 10-grain doses. P.J. 1895,1139.

Carpaine. *Dose.*—$\frac{1}{30}$ to $\frac{1}{6}$ grain (0·002 to 0·01 Gm.).

An alkaloid contained in the leaves of *Carica Papaya*; is a heart poison, and as a tonic may replace digitalis.

Its **Hydrochloride** is freely soluble in water, dose by injection, $\frac{1}{30}$ to $\frac{1}{16}$ grain (0·002 to 0·004 Gm.).

PARAFFINA.

The Paraffins used in pharmacy are arranged in order of consistency, commencing with the Hard (*Off.*), then follow the Soft (*Off.*)—vaseline and similar bodies and unctuous compounds, then the vaseline oils (thick fluids), then the official Liquid Paraffin, and finally the light fractions known as Amyl Hydride, Petroleum Spirit, &c.

Paraffinum Durum, **Hard Paraffin** (*Off.*).—*Syn.* PARAFFIN WAX.

A mixture of several of the harder members of the paraffin series of hydrocarbons; usually obtained by distillation from shale, separation of the liquid oils by refrigeration, and purification of the solid product. Is colourless, semi-transparent, crystalline, inodorous, and tasteless, slightly greasy to the touch. Sp. Gr. 0·82 to 0·94. Insoluble in water, slightly soluble in absolute alcohol, freely soluble in ether. It melts at 130° to 135° F., and burns, but not without a wick, with a bright flame, leaving no residue. Hard paraffins are supplie with the following melting points:—100°, 104°, 110° 115°, 120°, 125°, 127°, 130°, 135° F.

Ceresin. A hard white paraffin prepared from ozokerite or earth wax; has melting-point about 130° F When artificially coloured to resemble yellow wax i is sold as **Yellow Ceresin.**

Ozokerite is a hard paraffin obtained from Galician deposits.

Paraffin Solid, Sterilised.

For subcutaneous injection in plastic operations This is used to improve the size and shape of the nose ear, &c., where abnormal from birth, injury or from disease such as syphilis or lupus. It has been tried als as a means of checking prolapsus ani and prolapsu uteri, and in ophthalmic surgery. A certain consistenc and melting point are important. Stephen Page advises a compound melting between 110° and 115°

Solid paraffin of any desired melting-point can be obtained in sterile bottles covered with a 1 in 2,000 solution of Mercuric Chloride. A special rubber-covered syringe is used to prevent cooling during injection which is made at the rate of 1 Cc. every 10 seconds. The paraffin shrinks a little under the skin as it cools.—Pr. lxx,195.

For hernia.—L. ii./03,188,

For use as a stump on which to fit an artificial eye.—L. i./03,299.

For a badly sunken nose 7 to 8 Cc. are sufficient.—B.M.J. i./03,11.

Prolapse of bowel treated with good results.—B.M.J. i./03,366.

In atrophic rhinitis.—L. i./03,168; in prolapse of the rectum and uterus.—L. i./03,799.

Submucous peri-rectal injection curative of incontinence of fæces.—L.i./04,716.

Emulsio Paraffini. *Syn.* ASEPTIC SHAVING CREAM. St. Th. H.

Hard paraffin (melting at 55° C.) 22, prepared suet 3, soft soap 2, tragacanth powder 2, glycerin 2, oil of lavender 1, boiling water 68, all by weight. The soap and boiling water are thoroughly emulsified with the paraffin and suet in a pan surrounded by hot water, allowed to cool adding the tragacanth gradually, and when nearly cold the other ingredients. Is employed in surgery for shaving the part prior to operation.

Paraffinum Molle, Soft Paraffin (*Off.*).—*Syn.* PETROLATUM MOLLE, U.S.

A white or yellow semi-solid mixture containing some of the softer or more fluid members of the paraffin series of hydrocarbons. Melts at 96° to 102° F., or even somewhat higher; is usually obtained by purifying the less volatile portions of petroleum. It is known in commerce by various fanciful names, *e.g.*—

Vaseline, Vaselinum, or (as termed in early editions of this work) **Gelatum Petroleum,** Petroleum Jelly.

This, if repeatedly filtered through animal charcoal, becomes opal-white in appearance, and is known as

Vaselinum Album, White Vaseline.

There are several similar compounds :—

Adepsine, Chrisma, Cosmoline, Saxoline, Geoline, and **Salvo Petrolia** (white and yellow).

Soft paraffin is bland, inodorous, and tasteless, unirritating to the skin, mucous membrane, and wounds or sores in any condition. It has the advantage over lard and other fats, in that it is unchangeable—cannot oxidise or become rancid, and thus set up irritation. It cannot be saponified; caustic alkalis have no action on it; yet it can easily be washed off the skin with soap and water.

Soft Paraffin is insoluble in water, only slightly and partially soluble in alcohol, freely soluble in ether and chloroform. When melted, it combines with oils, melted fats, and paraffin wax, oleates, and oleic acid. It readily dissolves thymol, menthol, and salicylic acid; less so chrysarobin and phenol about 1 in 20; the alkaloids dissolve in it in about the following proportions:—atropine, 1 in 120; cocaine, 1 in 100; morphine, 1 in 200; quinine, 1 in 80; and veratrine, 1 in 80. The oleic acid solutions of these alkaloids dissolve in it in all proportions.

Soft paraffin is not readily absorbed, but protects the part to which it is applied, and hence is suitable as a vehicle for drugs intended to have a surface action, as in many skin diseases; by its emollient effect it prevents the formation of hard crusts of débris. It is likewise well adapted for drugs which turn lard and other fats quickly rancid, such as preparations of lead, mercury, zinc, and sulphur iodide.

The following is a firmer basis, and one requiring a higher temperature for complete liquefaction :—

Ceratum Petrolei.

Vaseline or Salvo Petrolia (preferably white) 2 parts,
Hard Paraffin (135° to 140°) 1 part.

Melt and stir till cold. It should be stirred with a palette knife in a large shallow evaporating dish, and be frequently scraped from the sides. Its tendency to form lumps is thus avoided. For complete liquefaction, this requires a temperature of about 125° F. This basis, which is suitable for medication, adheres more firmly to the lint on which it is applied than to the skin, thus leaving the wound clean. A little rubbed on the skin of the face or hands protects the parts more effectually than simple soft paraffin. With slight modification, the British Pharmacopœia adopted this basis as—

Unguentum Paraffini, Paraffin Ointment (*Off.*).

Hard Paraffin 3, Soft Paraffin 7. Prepared as above. When Paraffin Ointment is used as the basis of white ointments, it should be prepared with the white variety of Soft Paraffin; and when used in coloured ointments it should be prepared with the yellow variety of Soft Paraffin. But the white ointment is mostly preferred.

The proportions of hard and soft paraffin may be modified in order to meet the exigencies of climate and temperature.

Collapsubes (*v.p.*217) of Vaseline and of Petroleum Cerate with catheter and rectal attachments are convenient for uterine and rectal medication. The base may be medicated with various useful antiseptic and astringent principles; for formulæ, *vide* index.

Vaseline Oil.—*Syn.* LIQUID VASELINE.

Under this name a semi-liquid mixture of paraffins of low melting-point is used as a vehicle for **Hypodermic Injections.** For the suspension of insoluble mercurial salts, such as calomel, salicylate, succinimide, thymol-acetate, and yellow oxide of mercury, 1, 5 or 10 per cent. mixtures being employed.

Oleum Petrolei Flavum is a commercial article of similar consistence, but yellow in colour and less purified.

Emulsio Petrolei cum Hypophosphitibus, B.P.C.

Dose.—1 to 4 drachms.

Liquid Paraffin 8 ounces, Gum Acacia 4 ounces, Oil of Cinnamon 24 minims, Tragacanth 120 grains. Mix and add Water 6 ounces. Dissolve Sodium Hypophosphite and Calcium Hypophosphite of each 192 grains, in Water 4 ounces. Add to the above with constant trituration, then Water *q.s.* to 24 ounces.

Is found to be more palatable flavoured with Elixir of Saccharin 50 minims instead of half the Cinnamon Oil.

Emulsio Petrolei cum Hypophosphitibus cum Acido Cinnamico.

Is the above with $\frac{1}{6}$ grain Cinnamic Acid in each drachm. For use in phthisis.

Petrolatum, Petroleum Ointment, U.S.

One having a melting point of 104° to 113° F. and another 113° to 125° F., are official in U.S.

Paraffinum Liquidum (*Off.*). — *Syn.* OLEUM PETROLEI.

A clear oily liquid, without taste, colour, odour or fluorescence, obtained from petroleum after the more volatile portions have been removed by distillation. Has Sp. Gr. 0·885 to 0·890 (too high, not easily obtainable above 0·875); boils not below 680° F. (360° C.).

In commerce, Liquid Paraffin is known under various names, such as **Adepsine Oil, Chrismaline, Saxol, Oleum Deelinæ,** and **Paroleine.**

It is used as a basis for laryngeal and nasal spray solutions or pigments, containing menthol (1 in 8 or more), cocaine (soluble only 1 per cent.) or other medicaments.

It should be particularly noted that both the alkaloidal bases and their salts are in general only very slightly soluble in any of these liquid paraffins.

The intervention of oleic acid assists solution slightly.

Capsules (Gelatin) of Sterile Liquid Paraffin are made for lubricating catheters, &c.; they contain 30 minims, and are of special shape with pointed ends.

The various **Lubricating** and **Lighting Oils,** *e.g.* Kerosene-fractions between 120° and 133°C., and **Mineral Naphtha** are the next fractions, and are mentioned here to render the series more complete.

PETROLEUM BENZINE is the fraction between 60° and 90° C.

This Petroleum Benzine must be carefully distinguished from Benzene, the product obtained from Coal Tar, *v.p.* 184.

Petroleum Spirit. *Syn.* PETROLEUM ETHER (*Off.*) used for heating cauteries. Has Sp. Gr. 0·67 to 0·7, and distils over below 60°C. Further varieties are known as **Rhigolene** (boiling between 20° and 40° C.) and **Ligroin** (boiling between 80° and 120°C.).

Amyl Hydride. *Syn.* PENTYL HYDRIDE; PENTYLENE; HYDRAMYL. Obtained by the fractional distillation of Petroleum Spirit. Sp. Gr. 0·625 to 0·649, boiling point about 86° F. (30° C.). It is very inflammable; applied locally, it is not absorbed, but rapidly freezes the part by evaporation.

Vasogen and **Valsol** (or **Valsolum**).

Under these names oxygenated petroleum has been recommended as a vehicle for camphor and chloroform equal parts, creosote 20 per cent., guaiacol 20 per cent., ichthyol 10 per cent., iodine 6 and 10 per cent., iodoform 3 per cent., menthol 2 per cent., mercury 33½ and 50 per cent., sulphur 3 per cent. (Vasothion), tar 25 per cent. and other substances for skin medication. Dissolves iodoform and forms an injection useful for tubercular abscesses and anal fissure.—P.J. ii./96,79; L. ii./99,219.

Lotio Paraffini Composita. Gt. Orm. H.

Soft paraffin 3 ounces, Balsam of Peru 2 drachms, Mercuric Oleate 60 grains, Olive Oil 1½ ounces. To be applied with a stiff brush.

For parasitic skin diseases.

PELLETIERINA.

Dose.—3 to 6 grains (0·2 to 0·4 Gm.).

An alkaloid obtained from Pomegranate Root Bark, *Punica Granatum*, in minute shining white crystals.

The contained alkaloids are four in number, their amount varies between 0·5 and 0·7 per cent.

Pelletierinæ Sulphas, Punicine Sulphate.

Dose.—5 to 8 grains (0·32 to 0·52 Gm.).

A brown viscid, syrupy liquid, freely soluble in water. 5 grains subcutaneously injected is recommended for paralysis, vertigo, Menière's disease, tetanus, and hydrophobia, but mostly used as a remedy for tapeworm; 5 to 8 grains taken fasting, followed by a full dose of compound tincture of jalap; in nine cases out of ten the head is passed; for 13 years, half the above dose, and for infants one-tenth.

Pelletierinæ Hydrobromidum.

Dose.—5 to 8 grains (0·32 to 0·52 Gm.).

A brownish viscid liquid. Used in case of paralysis of muscles of the eye with good results.

Pelletierinæ Tannas, Pelletierine Tannate.

Dose.—5 to 8 grains (0·32 to 0·52 Gm.).

A greyish white amorphous powder insoluble in water. In tapeworm is an efficient remedy. As a tæniafuge, 8 grains followed in 2 hours by an ounce of castor oil proved an effectual dose, causing neither colic nor headache.—L. ii.94,1273.

PEPSINUM (*Off.*) and U.S.

The gastric juice of man is believed to contain two distinct digestive ferments:—

a. Pepsin. This changes proteids (fibrin, albumen, &c.) into peptones in an acid medium. To this the medicinal pepsins principally owe their activity.

b. Curdling ferment, which curdles the casein of milk; this is very active in the stomach of the calf, even when dried: it is contained in the preparations of rennet preserved with salt, known as **Essence of Rennet**.

Rennet Tablets are prepared and are of considerable convenience. One of these will curdle a quart of milk.

Pepsin (*Off.*) is a light yellowish brown or white powder, or in translucent grains or scales, prepared by drying under 100° F. the fresh mucous lining of the stomach of the pig, sheep, or calf. It has a faint, not disagreeable, odour, is moderately soluble in water or soluble 1 in 100 of alcohol (90 per cent.); rubbed with water, it makes a glairy mixture. That prepared from the stomach of the pig is preferred, and known as Pepsina Porci. Pepsin is supplied in three strengths to dissolve 2,500, 3,000, and 5,000 times its weight of hard-boiled white of egg.

Casein (*v.p.*254) is also employed for estimating the digestive power of pepsins.

Soluble and Insoluble Pepsins are supplied commercially.

Insoluble Pepsins are of two kinds, one precipitated by salt, and one made directly from the selected membranes without digestion, but purified by washing in spirit. These require the presence of a small quantity of Hydrochloric Acid to effect solution in water.

Soluble Pepsin is made by self-digestion of the membranes and subsequent dialysis of the resulting Peptone, thus leaving the peptic power in a soluble and more isolated form. It is then dried on glass plates, the product being sold in scale form or powder if preferred.

Dose.—5 to 10 grains (0·32 to 0·65 Gm.) either with or immediately before or after meals, in a pill or cachet, or sprinkled between slices of bread and butter. It is not unpalatable sprinkled on meat like pepper.

Glycerinum Pepsini (*Off.*).

Dose.—½ to 2 drachms (3·5 to 7 Cc.) in water.

Glycerin 525, Distilled Water 260, Hydrochloric Acid 10. Mix and add Pepsin 80. After a week decant or filter, and add Distilled Water *q.s.* to 875. (= Pepsin 1 in 12); is a very active solution.

It is better to dissolve the Pepsin in the water, adding the glycerin in 3 or 4 successive quantities, and finally the acid. A reduction of the amount of pepsin is suggested.—P.J. i./04,84.

A good preparation may be prepared without any precipitation by using good scale pepsin. An unfiltered specimen made in 1898 is perfectly bright now, 1904.

Liquor Pepticus (Benger's).

Dose.—1 to 2 drachms (3·5 to 7 Cc.) in a wineglassful of water with meals. An active solution of the ferments in weak alcohol.

Pepsina Liquida. Fluid Pepsin. A proprietary article agreeably flavoured. 1 drachm is claimed to peptonise 1,000 grains of egg albumen.

Pepsina Amylacea, Pepsine Acide Amylacée ou Poudre Nutritive of the French.

Dose.—5 to 15 grains (0·32 to 1 Gm.). Is prepared with the addition of starch and slightly acidulated.

Pepsinum Saccharatum, U.S.

Pepsinum U.S. 1, Milk Sugar 9. Resembles Pepsinum Saccharatum,—P.Jap.

Pegnine. A milk sugar and rennet preparation (of German manufacture) for curdling milk.

Pepsin-Essenz (Liebreich's).

Dose.—1 to 2 drachms (3·5 to 7 Cc.) in water after meals.

This preparation contains principally the curdling ferment in diluted glycerin solution; it is weak in proteolytic power.

Peptone.

A whitish or pale-brown powder, prepared from meat (the proteids and albuminoids), peptonised either by acidulation and heat under pressure, or by artificial digestion with pepsin or trypsin, and freed from saline matter. It is soluble in water, and is used for culture media for bacteriologic researches, and as a test for bile-products in urine (*v.p.*596).

Peptonised Beef.

A chocolate-coloured paste, having a bitter taste and the odour of extract of beef; prepared by artificially digesting beef by means of acidified fresh gastric juice and concentrating the solution. It is sometimes added to beef tea, but is too unpleasantly bitter to be readily taken by patients. It forms a useful nutritive enema.

Peptonised Beef Suppositories.

Contain about 30 grains of the last preparation in each. As much as 2 ounces of proteids can be administered daily by this means.

Peptonoids of Beef (Gerrard).

The formula is as follows:—Lean Beef, finely minced 8 ounces, Pancreatin 60 grains, Sodium Bicarbonat 60 grains, Water 1 pint. Digest for 3 hours a 130°F. with constant stirring; neutralise with hydrochloric acid, boil, strain and press the residue.

Tabellæ Pepsini. *Dose.*—1 or 2 with meals.

These have 3 grains of pepsin in each in combinatio with chocolate, they are portable and palatable.

Tabellæ Pepsini et Bismuthi. *Dose*—1 or 2.

Have 3 grs. bismuth oxynitrate added to the above.

Tablets of Pepsin, compressed, 3 grains (0·2 Gm.

Peptonising Pills (Benger), have similar action.

Vinum Pepsinæ, B.P.C.

Dose.—1 to 2 drachms (3·5 to 7 Cc.) with meals.

Pepsin 320 grains, Hydrochloric Acid 2 drachm Glycerine 1 ounce, Sherry *q.s.* to 1 pint.

P. Aus. Add. Malaga Wine 1000, Gelatin 1 dissolv in Water 10, mix and add to Pepsin, Distilled Wat of each 25, Diluted Hydrochloric Acid 3. Stand for days, shaking frequently, then filter.

U.C.H. has Pepsin 3, Diluted Hydrochloric Acid Sherry 60, macerate 2 days and filter.

NOTE.—For sale without a Wine Licence in t United Kingdom, Pepsin Wines must contain 1 *Hydrochloric Acid* (*B.P.*) *in* 80 *of the total product*

Ingluvin. *Dose.*—5 to 10 grains (0·32 to 0·65 Gm.) is a special Pepsin said to be prepared from the gizzard of the fowl; it has been chiefly used to allay the sickness of pregnancy.

PHOSPHORUS (*Off.*).

Dose.—$\frac{1}{100}$ to $\frac{1}{20}$ grain (0·00065 to 0·0032 Gm.), carefully increased.

Phosphorus is obtained by converting Calcium Phosphate into the soluble Superphosphate by heating with Sulphuric Acid; this is reduced to metaphosphate by heating with charcoal and finally by further heat is converted into normal Calcium Phosphate with evolution of vaporised Phosphorus.

A semi-transparent, non-metallic element brittle at low, soft and flexible at common, temperatures, melts at 110° F., ignites in the air at a slightly greater heat, and forms dense white fumes of phosphoric anhydride. At low temperatures it emits white vapours of phosphorous anhydride. It is almost insoluble in water, soluble about 1 in 320 of absolute alcohol, about 1 in 200 volumes of absolute ether, about 1 in 25 volumes of chloroform, about 1 in 100 respectively of Oleic Acid, almond, olive, castor, and theobroma oils, suet, and most fixed oils and fats; soluble in melted resins (? not unchanged in some); soluble in half its weight of carbon bisulphide; soluble also in, or rather combines chemically with, oils of turpentine and peppermint, forming non-luminous and comparatively non-poisonous liquids. These, as well as other essential oils, are incompatible with Phosphorus.

Antidotes.—The best is Oil of Turpentine, especially French variety (from *Pinus maritima*) 30 minims every half-hour; also Potassium Permanganate 1 per cent. Solution *per os*, Hydrogen Peroxide Solution, Magnesium Sulphate $\frac{1}{2}$ ounce.

Uncombined Phosphorus is a violent poison, and is a much more energetic medicine than an equivalent quantity of any of its chemical compounds. To obtain its full medicinal and certain action, and ensure its complete absorption, it should be administered in solution—either in oil or fat is most reliable. But its solutions, if liquid, are unpleasant to take and cause disagreeable eructations. Many are unstable, as on exposure to the air they rapidly oxidise and form almost inert compounds. It is a difficult pharmaceutical problem to present it in an active and palatable condition. The French perles or globules of phosphorated oil are stable and active, only the dose contained in them is overstated. Solutions of Phosphorus in oil of theobroma or suet make active pills, if these are coated with sandarach solution, and not kept too long. All the preparations of Phosphorus require skill and care, else much of the Phosphorus is spent or oxidised during manipulation. In making it into pills, this may be partially checked by dropping a minim or two of chloroform into the mortar.

Phosphorus is a nervine tonic and stimulant—given for nervous prostration, paralysis agitans, locomotor ataxy and impotence. It is most useful in neuralgia—especially in aged persons, in leucocythæmia, and in some skin diseases. In psoriasis, chronic eczema, and lichen it acts somewhat like its chemical ally, arsenic.

Cases of tubercular meningitis, osteomalacia, diabetes and lymphadenoma have improved under the administration of these compounds of Phosphorous.

Amorphous or **Red Phosphorus,** if perfectly free from white Phosphorus, appears to be physiologically and therapeutically inert.

Preparations.

N.B.—All preparations of Phosphorus require to be kept from the light and in a cool place, and to be as carefully and freshly prepared as possible.

Alcoholic Solutions of **Phosphorus** have been employed medicinally; but, as it requires 320 parts of cold and 180 of boiling absolute alcohol to dissolve it, and even in this quantity solution is difficult, and as on addition to water the Phosphorus is all precipitated, such solutions are unsatisfactory, uncertain, and give deceptive results.

Æther Phosphoratus, Teinture Ethérée de Phosphore (Codex, 1839).

Phosphorus, in small pieces, 4, Purified Ether, Sp. Gr. 0·720 (by weight), 200.

Macerate with frequent shaking in a dark place for a mouth and decant. About one-third of the phosphorus only is dissolved, it contains 1 in 150 (or 205 by measure). *Dose.*—1 to 10 minims (0·06 to 0·6 Cc.).

In neuralgia, 5-minim doses taken on the advent of an attack and repeated as required are useful.

Elixir Phosphori. *Adopted by B.P.C.*

Add Compound Tincture of Phosphorus (*v.p.*405) 1 drachm, to Glycerin 4 drachms. *Prepare freshly.*

Dose.—15 to 60 minims (0·9 to 3·5 Cc.) in water. Contains $\frac{1}{50}$ grain in one drachm. As a fluid form of Phosphorus this is palatable and is well borne by the stomach.

Oleum Phosphoratum (*Off.*).

Dose.—1 to 5 minims (0·06 to 0·3 Cc.), on sugar or in perles.

Contains about 1 per cent. (by weight) of Phosphorus in prepared almond oil; it is about as saturated as the corresponding preparation in the Paris Codex is, in which 1 in 50 is ordered, but only 1 per cent. is dissolved. *Oleum Phosphoratum*, P. Aus. Add., contains only one-tenth per cent of Phosphorus. Phosphorated Oil is phosphorescent in the dark.

Capsules contain 5 minims of the oil = $\frac{1}{20}$ grain of Phosphorus.

Perles of Phosphorated Oil.

Dose.—One after meals.

These contain $\frac{1}{100}$ grain, $\frac{1}{65}$ grain, and $\frac{1}{32}$ grain of Phosphorus respectively.

Phosphorated Cod Liver Oil.

Dose.—1 to 4 drachms (3·5 to 15 Cc.).

Is prepared by adding 160 minims of Phosphorated Oil, B.P., to a pint of cod liver oil. It contains $\frac{1}{100}$ grain in one drachm. It is a useful combination, but somewhat unpalatable, hence may conveniently be given in Capsules, containing half and one drachm respectively.

Pilula Phosphori (*Off.*).

Dose.—1 to 2 grains (0·065 to 0·13 Gm.).

Phosphorus 1, White Beeswax, melted, 12·5, Lard, melted, 12·5, Kaolin 11·5, Carbon Bisulphide 3·3 or *q.s.* Place the melted wax and lard in a slightly warmed mortar and stir until of the consistence of cream. Dissolve the phosphorus in the carbon bisulphide, mix with the melted fats, and add the kaolin. This mixture is to be kept under water in a bottle, from which light is excluded, and when dispensed, three parts are to be mixed with one part of gum acacia in powder to make a 2 per cent. mass. The pills should be varnished. The writer has been in the habit of preparing phosphorus pills with the oil of theobroma solution of phosphorus devised by him, as follows:—

Pilula Phosphori (Martindale).

Dose.—1 to 3 grains (0·065 to 0·2 Gm.).

Phosphorus 1 and Oil of Theobroma *q.s.*

Heat the oil to 300° F. and sustain the heat for 5 minutes. Strain and weigh 99 into a wide-necked bottle with an indiarubber cork, and when cooled to 130° F. add the Phosphorus, cork and shake well till the fat begins to solidify. In rolling it into pills, divide into suitable lots, and beat each in a mortar to render it plastic before applying it to the machine, then work off quickly and cover with sandarach solution. The mass contains 1 per cent. of Phosphorus in perfect solution. It should be kept from the light.

When Phosphorus is to be combined with other ingredients in a pill, a more concentrated fatty basis is to be preferred. The following will contain about 10 per cent. of Phosphorus:—

Sevum Phosphoratum, 10 per cent.

Phosphorus 1, Pure Carbon Bisulphide 5. Dissolve and add Prepared Suet 9.

Add a little of the suet at first, mix quickly, add the remainder, mix thoroughly and allow the bisulphide to evaporate. This basis may be used to make the following pills, which are perfectly stable as there is no interaction or decomposition.—B.M.J. i./02,578 ; P.J. i./02,224.

Dose of each, one directly after meals.

Pilula Phosphori ($\frac{1}{50}$ gr.) **cum Ferro** (3 grs.).

Phosphorated Suet	10 grains.
Reduced Iron	150 grains.
Compound Tragacanth Powder...	10 grains.
Chloroform	15 minims.

Mix, and add quickly

Mucilage of Acacia *q.s.*

Mix, and divide into 50 pills (or into 750 pills if the quantities be taken in grammes). Cover with sandarach solution. The chloroform prevents phosphorescence and oxidation.

Pilula Phosphori ($\frac{1}{50}$ gr.) **cum Ferro** (3 grs.) **et Nuce Vomica** ($\frac{1}{3}$ gr.).

Make as last, adding $\frac{1}{3}$ grain Extract of Nux Vomica to each.

Pilula Phosphori ($\frac{1}{50}$ gr.) **cum Nuce Vomica** ($\frac{1}{3}$ gr.).

Prepare as the last pills, replacing the reduced iron by one grain of milk sugar in each.

Pilula Phosphori ($\frac{1}{50}$ gr.) **cum Quinina** (1 gr.).

Phosphorated Suet	10 grains.
Quinine, pure (= 50 grs. Sulphate)	38 grains.
Chloroform	20 minims.
Mix quickly, and add	
Compound Tragacanth Powder...	10 grains.
Mucilage of Acacia	*q.s.*

Mix, and divide into 50 pills (or into 750 pills if the quantities be taken in grammes). Cover with sandarach solution.

Pilula Phosphori ($\frac{1}{50}$ gr.) **cum Quinina** ($\frac{1}{2}$ gr.) **et Ferro** (3 gr.).

Make as last, using half the quantity of quinine there ordered, and adding 3 grains Reduced Iron to each pill.

Pilula Phosphori ($\frac{1}{50}$ gr.) **cum Quinina** ($\frac{1}{2}$ gr.), **Ferro** (3 grs.), **et Strychnina** ($\frac{1}{40}$ gr.).

Prepare as the former pills, adding the proportionate quantity of strychnine.

Pilula Phosphori ($\frac{1}{50}$ gr.) **cum Strychnina** ($\frac{1}{40}$ gr.).

Prepare as Pilula Phosphori cum Quinina, with Strychnine 1$\frac{1}{4}$ grains *vice* Quinine 38 grains.

Pilula Phosphori ($\frac{1}{50}$ gr.) **cum Strychnina** ($\frac{1}{40}$ gr.) **et Ferro** (3 grs.).

Prepare as Pilula Phosphori cum Strychnina, adding 3 grains Reduced Iron to each pill.

Tinctura Phosphori Composita. *Adopted by B.P.C. Dose.*—3 to 12 drops on sugar.

Phosphorus 1, Chloroform 100. Warm gently in a stoppered bottle till dissolved, and add the solution to Absolute Alcohol 500.

Shake well and keep in the dark. Contains 1 in 600. Becomes acid on keeping.

Zinci Phosphidum, Zinc Phosphide, U.S.

Dose.—$\frac{1}{20}$ to $\frac{1}{3}$ grain (0·0032 to 0·02 Gm).

A steel grey crystalline powder, of which about one-fourth of the weight is Phosphorus, but it has only about one-eighth the medicinal activity of the latter. It has been used in medicine as a form of administering Phosphorus. It is stable, not oxidised by trituration, and can readily be formed into pills by levigation with milk sugar and glycerin of tragacanth.

Pilula Zinci Phosphidi.

One-sixth of a grain in each, prepared as above.

The **Hypophosphites** of **Ammonium, Calcium, Iron, Potassium,** and **Sodium,** being salts which have their Phosphorus in weak chemical combination, are considered as possessing somewhat similar therapeutic properties to Phosphorus. They, like Phosphorus itself, can all be readily ignited when brought in contact with a naked flame. These salts have been much used as nervine tonics, and are specially serviceable in the incipient stages of phthisis, where there is little tendency to hæmorrhage. The calcium salt is particularly useful in checking night-sweats. They are also valuable in the treatment of acne.

Acidum Hypophosphorosum, B.P.C.

Dose.—2 to 5 minims (0·12 to 0·3 Cc.),

A colourless liquid, containing 30 per cent. of hypophosphorous acid.

Barium Hypophosphite ... ... 8 ounces.
(Containing not less than 95 per cent. of
$Ba.(PH_2O_2)_2$.)
Diluted Sulphuric Acid
Distilled Water ... ... of each *q.s.*

Dissolve the hypophosphite in 36 ounces of hot water, and add slowly 17 ounces of diluted sulphuric acid, continuing the addition drop by drop until no further turbidity is produced. Set aside for 1 hour in a warm place, and filter, washing the precipitate with hot water until the washings have no longer an acid reaction. Evaporate the filtrate on a water bath to about 11½ ounces, or until of sp. gr. 1·1367.

Ammonii Hypophosphis.

Dose.—1 to 6 grains (0·065 to 0·4 Gm.).

In white deliquescent tabular crystals, soluble 1 in 2 of water. It has a nauseous saline taste.

Calcii Hypophosphis (*Off.*).

Dose.—3 to 6 (or 10, B.P.) grains (0·2 to 0·65 Gm.).

A white crystalline salt, with a pearly lustre and a bitter, nauseous taste, soluble 1 in 7 of water. It is prepared by heating phosphorus with milk of lime until phosphoretted hydrogen ceases to be given off, then filtering and evaporating to crystallise or precipitating with alcohol. The other salts are generally prepared from this by the double decomposition of the carbonates or sulphates of their bases.

Syrupus Calcii Hypophosphitis, B.P.C.

Dose.—1 to 4 drachms (3·5 to 15 Cc.). Each drachm contains about 1 grain of the hypophosphite.

Calcium Hypophosphite 160 grains, Distilled Water 9 ounces. Dissolve, filter, and add Sugar 1 pound. Dissolve with a little heat, and add Hypophosphorous Acid 20 minims, Distilled Water *q.s.* to 1 pint.

Ferri Hypophosphis.

Syn. FERROUS HYPOPHOSPHITE.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.) in a pill with syrup.

In commerce is a whitish amorphous powder with a chalybeate taste, only slightly soluble in water.

Liquor Ferri Hypophosphitis Fortis, B.P.C.

Dose.—10 to 30 minims (0·6 to 1·8 Cc.).

Ferric Chloride	1,000 grains.
Sodium Hypophosphite ...	1,100 grains.
Distilled Water	*q.s.*

Dissolve each in 10 ounces of water, add latter to former, collect precipitate, wash it until nearly free from chloride and dissolve it in the following Solution:—

Strong Solution of Ammonia 360 minims, Citric Acid 800 grains, Distilled Water 5 ounces. Filter and estimate the Ferric Oxide obtained from 10 Cc. of the solution by precipitation with potassium hydrate after washing, drying and igniting; multiply weight in Gms. by 137·1 to obtain amount of Iron expressed as Ferric Hypophosphite in grains per ounce and adjust by adding water *q.s.* Contains Iron equal to 40 grains of Ferric Hypophosphite in 1 ounce.

Liquor Hypophosphitum Compositus, B.P.C.

Syn. LIQUOR FERRI HYPOPHOSPHITIS COMPOSITUS.

Dose.—½ to 2 drachms (1·8 to 7 Cc.).

Calcium Hypophosphite	320 grains.
Sodium Hypophosphite	320 grains.
Magnesium Hypophosphite	160 grains.
Strong Solution of Ferric Hypophosphite	6 ounces.
Distilled Water	*q.s.* to 1 pint.

Dissolve and mix.

Each drachm contains about 2 grains each of the sodium and calcium hypophosphites, 1 grain magnesium hypophosphite, and 1½ grains of ferric hypophosphite.

Forms a much more useful 'chemical food' for children than Parrish's preparation. Best administered in raisin wine, or for adults in Carlowitz.

Syrupus Ferri Hypophosphitis, B.P.C.

Dose.—½ to 2 drachms (1·8 to 7 Cc.).

Strong Solution of Ferric Hypophosphite 4 ounces, Syrup 16 ounces.

Pilula Ferri Hypophosphitis cum Strychnina.

Strychnine $\frac{1}{30}$ grain, Ferrous Hypophosphite 2 grains. To make one pill (or in grammes to make 15).

Dose.—1 twice or thrice daily.

Potassii Hypophosphis.

Dose.—1 to 6 grains (0·065 to 0·4 Gm.).

A deliquescent granular white powder, having a nauseous, bitter taste. Soluble 1 in 1 of water.

Sodii Hypophosphis (*Off.*).

Dose.—3 to 10 grains (0·2 to 0·65 Gm.).

A white granular deliquescent salt, with a bitter, nauseous taste. Soluble 1 in 0·63 of water.—P.J. i./02,552; and freely soluble in alcohol.

Syrupus Sodii Hypophosphitis. B.P.C.

Dose.—1 to 4 drachms (3·5 to 15 Cc.). Each drachm contains 1 grain of the Hypophosphite.

Sodium Hypophosphite	160 grains.
Distilled Water	3 drachms.

Dissolve, filter, wash the filter with 1 drachm of distilled water, and add

Syrup, *q.s.* to	1 pint.

Syrupus Hypophosphitum Compositus, B.P.C. *Dose.*—½ to 2 drachms (1·8 to 7 Cc.).

Strychnine	1 grain.
Hypophosphorous Acid, 30 per cent.	2 drachms.

Dissolve and add to	
Calcium Hypophosphite	80 grains.
Manganese Hypophosphite... ...	40 grains.
Potassium Hypophosphite	40 grains
Quinine Hypophosphite	20 grains.
Distilled Water	8 ounces.
Dissolve, filter, and add	
Strong Solution of Iron Hypophosphite	1 ounce.
Refined Sugar	14 ounces.
Dissolve without heat, then add	
Chloroform	20 minims.
Alcohol (90 per cent.)	40 minims.
Shake, and lastly add	
Distilled Water *q.s.* to	1 pint.

It is well to supply this preparation in amber bottles. In phthisis and like cases, hypophosphites raise the nervous power and improve the condition of the secretions.

Tablets Compound Hypophosphites each equivalent to ½ drachm of the above are prepared.

Syrupus Hypophosphitum Compositus.

(American). *Dose.*—1 drachm (3·5 Cc.)

The following formula has been published, based on an analysis; the product much resembles the advertised preparation:—Iron Pyrophosphate (Sodio-citro-ferric Pyrophosphate) 15 grains, Sodium Hypophosphite 45 grains, Strychnine (dissolved with a drop or two of Diluted Sulphuric Acid) ½ grain, Manganese Hypophosphite 15 grains, Quinine Sulphate 5 grains, Distilled Water 1 ounce. Heat gently to dissolve, without further addition of acid, and add to Syrup *q.s.* to weigh 16 ounces

Great care must be taken to distinguish these preparations which contain strychnine from the following, which contains none:—

Syrupus Hypophosphitum, U.S., has Hypophosphite of Calcium 45, of Potassium 15, of Sodium 15 with diluted Hypophosphorous Acid 2, Sugar 500, Spirit of Lemon 5 (Oil of Lemon 50, freshly grated Lemon Peel 50, Deodorised Alcohol 92·5 per cent. by weight to 1,000), macerate 24 hours, water *q.s.* to 1,000.

An American syrup sold as **Hematic Hypophosphites** is similar, but contains strychnine hypophosphite ⅛ grain in 1 ounce.

Vinum Hypophosphitum Compositum, V.C.H.

Dose.—1 drachm for a child 1 year old.

Solution of the Hypophosphites 20, Syrup 20, Alcohol 90 per cent. 8, Caramel 1, water to 120.

Wheat - Phosphates, Saccharated, the soluble part of bran—the organic phosphates and cerealin (ferment of bran) combined with milk sugar—are specially useful in weakly and rickety children, and where digestion is impaired seem to aid the assimilation of food and even of such medicines as iron.

Dose.—Half a teaspoonful (increased) 2 or 3 times a day, may be taken as sugar with food.

PHYSOSTIGMATIS SEMINA.

Calabar Bean (*Off.*).

Dose, in powder.—1 to 4 grains (0·065 to 0·26 Gm.)

The poisonous properties of this drug, the ripe seed of *Physostigma venenosum*, chiefly due to Physostigmine which is contained in the cotyledons only, the content being about 0·25 per cent.

These seeds are also known as Ordeal Beans on account of their employment by the African natives on criminals to decide as to guilt or innocence.

Preparations of Physostigma and its alkaloid Physostigmine, applied topically to the eyes, contract the pupil, and are antagonistic to atropine.

For tetanus the dose of extract given by mouth rectum, or hypodermically, should be repeated, and increased every hour, so as to produce paralysis little short of arresting the breathing. For chorea also it is given in smaller doses. In paralysis it arrests muscular wasting and improves muscular power. In hemiplegia or paraplegia, give doses of $\frac{1}{30}$ to $\frac{1}{10}$ grain frequently.—R.

Antidotes. Emetics, Atropine or Belladonna, Chloral Strychnine, Tannin.

Extractum Physostigmatis (*Off.*).

Dose.—$\frac{1}{4}$ to 1 grain (0·016 to 0·065 Gm.), in case of tetanus may be given every hour and increased.

An alcoholic extract containing three-fourths of its weight of milk sugar.

Tinctura Physostigmatis, B.P.C.

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Calabar Bean, in No. 40 powder, 1, Alcohol 90 per cent. *q.s.* to produce 5 (U.S. has 15 in 100).

Cases of Traumatic Tetanus have been treated with Calabar bean; $\frac{1}{8}$ grain of the extract every hour, then $\frac{1}{8}$ grain every 2 hours, has been successful.

It is antagonistic to strychnine, but is *not* to be depended on as a remedy for poisoning by nux vomica or strychnine.

Physostigmina. *Syn.* ESERINE.

Dose.—$\frac{1}{100}$ to $\frac{1}{50}$ grain (0·00065 to 0·0013 Gm.).

The alkaloid is in large colourless rectangular crystals, slightly soluble in water, freely in ether, soluble 1 in 180 of vaseline. Solution in castor oil, $\frac{1}{2}$ to 1 per cent. (by weight) is used. Has the advantage of not oxidising—turning pink—so readily as the solutions of the salts.

Unguentum Physostigminæ R.O.H.

Physostigmine 0·25, Soft Paraffin 100; heat to dissolve.

Physostigminæ Hydrobromidum.

Dose.—$\frac{1}{60}$ to $\frac{1}{20}$ grain (0·0011 to 0·0032 Gm.).

A whitish amorphous powder, as met with in commerce, slightly hygroscopic, very soluble in water.

Physostigminæ Salicylas, U.S.

Dose.—$\frac{1}{60}$ to $\frac{1}{20}$ grain (0·0011 to 0·0032 Gm.).

In colourless, shining, needle-shaped, or short columnar crystals. A stable salt, soluble 1 in 140 of cold water; much used as a myotic.

Tablets. Hypodermic $\frac{1}{100}$ grain.

Physostigminæ Sulphas, (*Off.*). P.G.

Dose.—$\frac{1}{60}$ to $\frac{1}{20}$ grain (0·001 to 0·0032 Gm.).

In yellowish white granular crystals, deliquescent and very soluble in water, forming a colourless solution, which becomes pink in a few days, but does not lose much in efficacy.

In doses of $\frac{1}{100}$ grain (0·00065 Gm.) has been shown to be of value in tympanites as occurring in typhoid fever.—M. 01/150.

Guttæ Physostigminæ. St. Th. H.

Contain 0·5, or 1 per cent.

Guttæ Physostigminæ cum Cocaina, R.O.H.

Physostigmine Sulphate 0·25, and Cocaine Hydrochloride 1, to 100.

Injectio Physostigminæ Sulphatis Hypodermica, 4 grains to 1 ounce.

Dose.—1 to 4 minims (0·06 to 0·24 Cc.).

Lamellæ Physostigminæ, Discs of Physostigmine. (*Off.*).

Each contains $\frac{1}{1000}$ grain (0·065 milligramme) o Physostigmine Sulphate; also prepared containing $\frac{1}{250}$ grain and $\frac{1}{500}$ grain respectively, for ophthalmic use Also $\frac{1}{1000}$ grain, combined with cocaine $\frac{1}{200}$ grain.

'Sterules' of Physostigmine Sulphate Solution 4 grains to the ounce are prepared, *vide p.*487; also **'Sterules'** of Physostigmine Sulphate 1 grain with Cocaine Hydrochloride 4 grains to the ounce.

Unguentum Hydrargyri Oxidi Flavi cum Physostigmina, R.O.H.

Physostigmine 0·25, Soft Paraffin or Lanoline (anhydrous) 100; heat till dissolved, and add, when cold. Yellow Mercuric Oxide 1.

References.

Successful use in tetanus.—L. i./98,1462; Pr. xxxiii 255.

For corneal ulcers in scrofula, solution of 2 grains to an ounce may be dropped into the eye; also in mydriasis and glaucoma.

In glaucoma Eserine is indicated, in iritis Atropine. — Pr. xxxi.321.

Ocular pressure increased by its use.—L. ii./86,183.

PICROTOXINUM. (*Off.* and U.S.).

Dose.—$\frac{1}{100}$ to $\frac{1}{25}$ grain (0·00065 to 0·0026 Gm.).

A neutral crystalline principle obtained from the fruits of *Anamirta paniculata*—cocculus indicus, in colourless prismatic crystals, does not form salts. Nearly entirely soluble 1 in 330 of water, soluble 1 in 13 of 90 per cent. alcohol, freely in glacial acetic acid and caustic alkaline solutions. It requires about 500 parts of olive oil or lard to dissolve it, and 60 parts of glycerin even if heated to 212° F.; most of it also crystallizes out on cooling. Taste bitter. It has been used with good results in checking night-sweats, also employed in epilepsy and chronic alcoholism; overdoses cause stupor, delirium and convulsions.

Antidote.

Administer emetics, use the Stomach Tube, and then give Chloral and Potassium Bromide.

Injectio Picrotoxini Hypodermica.—1 in water 360, filtered.

Dose.—3 to 6 minims (0·18 to 0·35 Cc.).

Liquor Picrotoxini Aceticus.

Picrotoxin 1, Glacial Acetic Acid 30. Dissolve and add Distilled Water to 250. Filter.

Dose.—2 to 12 minims (0·12 to 0·7 Cc.) in water.

Is palatable and keeps in solution at all temperatures.

Pilula Picrotoxini.

Picrotoxin $\frac{1}{30}$, $\frac{1}{50}$, $\frac{1}{80}$, or $\frac{1}{100}$ grain, triturated with milk sugar and glycerin of tragacanth *q.s.*, to make one pill. Forms a suitable dose for checking night-sweating of phthisis taken for 2 or 3 nights successively, it is slightly cumulative, therefore may be temporarily discontinued with its effects persisting.

Night-sweating of phthisis, 2 to 4 minims of the acetic solution or $\frac{1}{120}$ to $\frac{1}{60}$ grain in pill was very efficient; does not, like atropine or belladonna, produce dryness of the throat, or any unpleasant effect.—Pr. xxiii.241.

An ointment 10 grains to an ounce, is used for parasitic skin affections.

Clinical study of its anti-sudorific powers.—L. ii./95, 668; as an anti-convulsive.—P J. ii./02,362.

Antidotism to morphine.—L.i./89,497; P.J.1889,703; Ph. Gaz. 1889,184.

PILULÆ.

One of the principal considerations in the production of a satisfactory pill is the choice of the excipient. If this has been left to the dispenser, as is usually the case, he should choose one which will not be incompatible with, but, if possible, have a preservative action on the other ingredients of the pill, neither inconveniently increase its size nor interfere with the quick or prolonged action intended by the prescriber.

A good pill mass requires particles void of fluidity, with adhesive, semifluid substance to bind them together. Where there are but little fibrous or insoluble solid particles prescribed, the mass should be made as hard as possible and quickly rolled out, or the pills will not keep their shape. Most vegetable powders contain fibrous matter which merely require a suitable fluid added to develop their tenacity and enable them to be rolled into pills. Glycerin as an excipient, being very hygroscopic, causes pills in time to have an unsightly, moist appearance, and if used is best mixed with alcohol. Glycerin in any form should not be used as an excipient for hygroscopic drugs, such as soft extracts, squills, aloes, &c. For these mucilage of acacia or syrup is preferred, and tragacanth in moderation is very useful as a 'hardener.' For insoluble metallic salts, glycerin of tragacanth may be employed (*v.p.*509), adding, if necessary, a small quantity of powdered acacia or althæa to give firmness to the pill. The use of glycerin should be avoided in pills intended to be varnished; use for these equal parts acacia and tragacanth, with syrup *q.s.*

For Oils soap is best used, *c.f.* Pilula Creosoti *p.*225.

In the official Pill masses **Syrup of Glucose** (*Off.*) is employed; this is prepared by heating Glucose (syrupy) 1, with Simple Syrup 2 (by weight).

Glucantha, *v.p.*509.

As a means of rendering pills tasteless, silvering or gilding is giving place to covering them with solution of sandarach, gelatin, or pearl-coating them with French chalk and gum, or sugar-coating them.

Varnishing Pills.—The late W. Martindale suggested the use of a sandarach solution—1 part sandarach in 1 part of absolute alcohol (= Pill Varnish). The pills should be free from powder, as every imperfection will show through the transparent coating. Having placed them in a covered pot, a few drops of the sandarach solution are poured in and diffused equally over the pills by a few circular movements of the pot. They are then poured out on a clean plate and detached from each other. Shortly afterwards they are moved from their positions carefully with a pointed glass rod dipped in a little alcohol. In about 20 minutes they will be quite dry, but are better allowed to be exposed to the air an hour or so more.

In **coating** Pills with **Gelatin,** they should be free from powder and not too dry. A solution is prepared by dissolving 1 part of gelatin in 4 parts of water, straining whilst hot through fine muslin, allowing to cool and re-heating to get rid of air bubbles. The pills are stuck on the points of fine needles and dipped into the solution, kept hot by a water bath; as they are taken out, each needle is slowly revolved to make the coating even on the pill, the reverse end of the needle is then stuck into a sheet of cork or pincushion, and the needles are left in this upright position till the pills are dry, which is usually in about half an hour.

The **gelatin coated** Pills of commerce (without the pin points) are made by holding them in a frame by suction, half the pill is then dipped, allowed to dry, and then the other half is coated after transferring to a corresponding mould beneath.

In **pearl-coating** Pills they should be made firm and free from powder; they are first evenly covered with a mucilage of tragacanth 4 grains to 1 ounce with half a drachm of syrup added; this is done by shaking them in a covered pot with a few drops of the mucilage, they are then thrown into another covered pot having a concave bottom and containing some finely powdered French chalk; after gently rotating them in this for a few seconds they are turned into a third clean and similar pot and rotated slowly; the excess of powder is then blown off, the lid placed on the pot, and they are finished by shaking them quickly and regularly round until they become even and polished.

The **sugar-coating** of Pills is a confectioner's art. It can only be done successfully in large quantities, and the pills must be hard and dry; they are placed in a hemispherical metallic pan kept warm, while making eccentric revolutions, and are alternately moistened with syrup, and dusted with finely-powdered sugar, till dry and uniformly covered.

Keratin-coating of Pills is performed for the purpose of rendering them insoluble in the gastric juice, so that they pass into the intestine unchanged. Their action is thus localised. For this purpose, only oily excipients should be used, and the pills covered with a thin layer of cacao-butter previous to applying the **Keratin Solution.** The latter is made by removing from horn shavings all that is soluble in pepsin and diluted hydrochloric acid. The residue dissolved in weak alcoholic solution of ammonia, and evaporated to a mucilaginous consistence, forms the gum-like liquid, keratin solution. The pills require three coatings with this liquid, and so prepared they are freely soluble in the alkaline liquid in the intestine; and, although insoluble in the acid gastric juice, their coating is partially soluble in acetic and citric acids, which should therefore not be taken at the same time.

Should be employed for pills containing substances which irritate gastric mucous membrane, neutralise acidity of stomach, or are desired to act on intestinal membrane without action on stomach, such as those intended to destroy worms.—L. ii./90,838.

A suitable coating for carbolic acid in pills to relieve diarrhœa.—L. ii./93,1305.

Salol Varnish for pills intended to act in intestines only, *v.p.*41.

A revised list of pills in general request in London is contained in the index.

Cachets of wafer paper are useful for enclosing nauseous medicines, drugs that do not yield all their activity to any solvent, and those whose suspension in fluids is difficult or inaccurate owing to non-diffusibility or decomposition, or whose taste is disagreeable, such as

Antifebrin
Antipyrin
Bismuth Carbonate
Cascara
Compound Ipecacuanha Powder
Charcoal
Guaiacol Carbonate
Guaiacum and Sulphur
Ichthoform
Methylene Blue
Naphthalene
Naphthol
Pepsin
Phenacetin
Quinine Sulphate
Rhubarb
Saccharated Ferrous Carbonate
Salicin
Salol
Sodium Salicylate
Sulphonal
Tannalbin
Trional

They should be dipped in water immediately before swallowing.

Empty Gelatin (Hard) Capsules are short tubes closed at one end, telescoping into one another, used for a similar purpose.

Soft Gelatin Capsules are very useful for dispensing nauseating drugs, particularly oils, for list, *vide* index.

A pill, cachet, or, in fact, any medicine, should always be followed by a draught of water, to carry it quickly through the œsophagus.

PINUS.

Pinus Sylvestris. *Syn.* SCOTCH FIR OR PINE.

From the wood of this tree (principally in America, France, Russia and Germany) much of the oleo-resin, common turpentine, oil of turpentine,* Gum Thus or American frankincense, resin or colophony and tar (*vide* Pix Liquida) are produced. From its leaves also are prepared an extract, volatile oil and wool. At certain establishments in Germany, a system of treatment of rheumatism and other diseases by baths, &c., known as the **Pine Cure,** is followed.

Fir Wool, or **Fir Wool Wadding,** sold in sheets, is a cotton wool, impregnated with the above; it has the faint, agreeable odour of the Pine-leaf, and is manufactured into blankets, jackets, spencers, stockings, &c. A Liquor is also obtained, which is employed for baths. On evaporation this yields

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* From Oil of Turpentine, which may be B.P. "rectified if necessary"—it is then commonly known as Camphine—are prepared:—

Capsules, 5 and 10 minims each. *Dose.*—1 or more.

Linimentum Terebinthinæ (*Off.*).
Oil of Turpentine 26, Camphor 2. Dissolve, and emulsify by adding gradually to Soft Soap 3, dissolved in Distilled Water 4. Then add Distilled Water *q.s.* to 40.

Linimentum Terebinthinæ Aceticum (*Off.*).
Oil of Turpentine 4, Glacial Acetic Acid 1, Liniment of Camphor 4. Resembles St. John Long's liniment and other proprietary articles.

"Sanitas" Fluid, the aqueous solution resulting from he action of water upon air-oxidised turpentine, containing s its active principles hydrogen peroxide, thymol, a soluble amphor, and some camphoric acid. It is an oxidising agent nd an antiseptic, is non-poisonous, does not stain linen, is seful for household disinfection and for surgical operaions. **Toilet "Sanitas"** is similar, with an agreeable erfume. **"Sanitas" Oil** is an air-oxidised turpentine, he oxidation being conducted in the presence of water; it has Sp. Gr 0·95. An organic peroxide is present in it, which gives t an oxidising strength equal to that of a ten-volume solution f hydrogen peroxide. It is largely used for the treatment f consumption and lung and throat troubles by inhalation n the so called "Pine Oxygen" treatment of those affecions. In connection with this **"Sanitas" Antiseptic Pastilles,** and **"Sanitas" Pocket Spittoons,** have ecently been prepared. As an antiseptic it may be mixed with awdust and sprinkled about, or diluted with alcohol or methyated spirit and sprayed in a room, or diluted 1 in 8 to 20 of olive il for various surgical dressings and affections of the skin. Mixed with powdered acacia, then boldly diluted with water nd well shaken, it forms a "Sanitas" emulsion which can be iluted further *ad lib.* for various purposes. **Soluble "Sanitas" Oil** emulsifies with water, and is also miscible with ils, fats, and petroleum bases. Is used of strength 1 in 20 to 0 of water as a disinfectant, and in the bath.

Extractum Pini Sylvestris. Fir-Wool Extract.

A dark brown liquid of the consistence of treacle, readily soluble in water and having a faint pine odour; 2 to 4 ounces are added to a 30-gallon warm bath for rheumatism.

Oleum Pini Sylvestris. Fir-Wool Oil.

In the preparation of the true Fir Wool this was obtained by distillation from the pine-leaf as a colourless oil with the agreeable odour of the fresh pine-leaf, Sp. Gr. 0·868. For rheumatism applied by rubbing, the affected part being afterwards covered with warmed Fir-wool wadding; it was also added in quantities of a drachm or more to warm baths for the same disease. (*Now unobtainable.*)

Vapor Olei Pini Sylvestris (B.P. 1885 and **T.H.**).

Fir-Wool Oil 40 minims, Light Magnesium Carbonate 20 grains, Water to 1 ounce. One drachm to a pint of water at 140° F. forms a mild stimulant inhalation in chronic laryngitis.

Oleum Pini, Oil of Pine (*Off.*)

Dose.—$\frac{1}{2}$ to 3 minims (0·03 to 0·18 Cc.).

The oil of the leaf of *Pinus Pumilio* possesses more agreeable odour and taste than the last. Is sold under the fancy names of Pinol and Pumiline, and is used for inhalations. Jujubes, pastilles, and soaps are also sold, medicated with the oil.

Syrupus Pini Pumilionis.

Dose.—1 drachm (3·5 Cc.).

Pine Oil 160 minims, Tincture of Saffron 5 drachms and Alcohol 90 per cent. $2\frac{1}{2}$ ounces, mix; then mix boiling water 5 drachms, Syrup 5 ounces, and combine these solutions; add Glycerin 5 ounces, and make up to the volume of 20 ounces with Syrup.

Linctus Pini, Terpin et Heroin.

Dose.—1 drachm (3·5 Cc.). Contains $\frac{1}{48}$ grain Heroin Hydrochloride and $\frac{1}{4}$ grain of Terpine Hydrate.

Dissolve Terpine Hydrate 40 grains in the alcohol in above, and Heroin Hydrochloride $3\frac{1}{3}$ grains in the water, and proceed in other respects as above.

Glycogelatin Pastils are also prepared (*v.p.*275) containing each ½ minim of pumilio pine oil with $\frac{1}{8}$ Terpene Hydrate, and $\frac{1}{48}$ grain Heroin Hydrochloride.

Artificial Venice Turpentine may be produced by mixing resin 17, linseed oil (boiled) 12, oil of turpentine 8, or by dissolving resin in oil of turpentine; is mostly employed in the Arts. The true article exudes from the branches of the larch, *Pinus Larix*.

Hartmann's Wood Wool, and **Wood Wool Wadding** consist of finely-comminuted pine wood, rendered antiseptic with sublimate; they are very absorbent, and are now much used for dressing wounds, especially in the form of **Wood Wool Tissue**; and the wadding is formed into "**towelettes**" for ladies' use in menstruation and hæmorrhage, and into **accouchement sheets, gonorrhœa bags, vaccination pads** and **sponges**; triangular pads are also made **(bapkins)** to assist in the cleanliness and comfort of infants, as well as **Sheets** and **Mattresses** for use in cases of cholera and other diseases with infective discharges.

PIPERAZINA.

DIETHYLENE-DIAMINE.

Dose.—4 to 10 grains (0·26 to 0·65 Gm.), or 15 grains daily.

An organic base formed by the action of sodium glycol on ethylene-diamine hydrochloride; in small colourless deliquescent crystals, non-caustic, but with strongly alkaline reaction, saline taste and faint odour, soluble about 4 in 7 of water. Melts at 104° to 107° C., and boils at 145° C. Dissolves twelve times as much uric acid as lithium carbonate, and the urate formed is soluble in much less water. Even in presence of excess of uric acid the neutral salt only is formed. Forms a compound with sodium-theobromine like Diuretin.

Given internally, is a powerful solvent of uric acid and insoluble urates in the system, and is successfully used as a remedy in cases of uric acid diathesis, such as gout, rheumatism, and urinary calculi; it is also reputed to have an aphrodisiac effect. It is not destroyed in the organism, but is excreted in the urine unchanged and combined with uric acid. It increases the flow diminishes the acidity and the specific gravity.—B.M.J.E. ii./90,22; M.C. Oct. 92,65.

Effervescent Piperazine contains 5 grains in a drachm *Dose.*—1 drachm (4 Gm.)

Effervescent Piperazine with Phenocoll. *Dose.*—1 drachm (4 Gm.).

Contains 5 grains of each in a drachm. Useful in painful rheumatic affections. A specific in rheumatoid anthritis.

Piperazine Water, Aërated.

This contains 5 grains to the average tumblerful, or 15 grains to a syphon, and is a pleasant and efficacious mode of administration.

Tablets of Piperazine.

Contain 5 and 15 grains (0·32 Gm. and 1 Gm.). One of the latter dissolved in water forms a day's medication.

Beneficial action in gout not due to solvent action on material of gouty concretions.—L. ii./92,131; B.M.J. ii./92,64; i./96,1432.

It inhibits, in diabetics, the transformation of glycogen into sugar.—B.M.J.E. ii./93,72.

Complete success as a remedy for renal colic.—L. ii./93,1661; B.M.J.E. i./93,75.

Strong recommendation for its use in gout.—B.M.J. ii./99,1792.

'Vescettes' of Piperazine, 5 grains (0·32 Gm.) each, to be crushed and dissolved in a draught of warm water.

Lycetol.—DI-METHYL-PIPERAZINE TARTRATE.

Dose.—4 to 10 grains (0·26 to 0·65 Gm.).

Has equal solvent action on uric acid with piperazine, little action on human organism. Causes increase of diuresis, and reduces Sp. Gr. of urine.—P.J. 1894,621.

Lycetol a valuable help in the treatment of gout and rheumatism.—L. ii./97,39; i./99,136.

Lysidine.

Dose.—10 to 30 minims (0·6 to 1·8 Cc.).

A 50 per cent. solution of **Ethylene-Ethenyl-diamine**; is a colourless alkaline liquid, recommended in acute gout and uric acid diathesis generally.—P.J. 1894, 355; 1895, 1191; Am.M.S.B. 1894, 1447.

Piperazine and Lysidine added to uric-acid-depositing urine, hinder deposit, and they both act by rendering the blood more capable of removing the acid and so increase elimination.—B.M.J. ii./96,901; P.J. i./97,89.

Lysidinæ Tartras Acidus, Lysidine Bi-tartrate.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

In white granular crystalline powder, with a saline taste, non-deliquescent and readily soluble in water.

Sidonal, Piperazine Quinate. (Patented.)

Daily dose during pain 80 grains (5 Gm.), less in chronic cases. **Tablets** 7½ grains (0·5 Gm.).

In white crystalline granules, soluble 1 in 1 easily of water, and about 1 in 250 of alcohol 90 per cent. used as a uric acid solvent in gout and allied affections.—P.J. i./00, 54; ii./00,213,489.

Effervescent Piperazine Quinate.

Dose.—1 drachm or more. Contains 5 per cent.

Sidonal, New. *Dose.*—30 grains (2·0 Gm.).

This is said to be the anhydride of Quinic Acid, it is a white crystalline powder soluble about 1 in 2 of water, and about 1 in 11 of alcohol 90 per cent., and is specially used for gout.—P J. ii /02,273.

Tablets contain 7½ grains.

Hexamethylenetetramine.—*Syns.* UROTROPINE, AMINOFORM, FORMIN.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

In colourless granular crystals, with an alkaline reaction, prepared by combining ammonia and formaldehyde; is easily soluble in water, less so in alcohol, and almost insoluble in ether. A valuable diuretic and solvent of uric acid concretions: it relieves cystitis associated with incontinence of urine, and destroys typhoid bacilli in the urine.—B.M.J. ii./01,394; B.M.J.E. ii./03,63.

Valuable as a urinary antiseptic.—L. i./01,174.

A valuable drug but may cause hæmaturia unless well diluted.—B.M.J. i./01,1472.1617.

Relieved the pyuria of tabes dorsalis.—L. ii./03,1019.

It is said to have useful preservative properties.—P.J. ii./03,777.

Tablets, 3, 5, and 7½ grains, and Urotropine Effervescent 4 grains.

Helmitol.

Dose.—15 grains (1·0 Gm.).

A white powder, soluble about 1 in 7 of water and slightly soluble in alcohol 90 per cent.. This is said to be the anhydro-methylene citrate of hexamethylenetetramine; given internally it is believed to liberate formaldehyde in the bladder, and so to have a disinfectant action; alkalis favour this decomposition. Valuable for cystitis, urethritis, and gonorrhœa.—B.M.J.E. ii./03, 79.

Tablets contain 7½ grains (0 5 Gm.).

Hetraline.—*Syn.* DIOXYBENZOL-HEXAMETHYLENE-TETRAMINE.

Dose.—7½ to 30 grains (0·5 to 2 Gm.).

In crystalline needles containing about 60 per cent. of hexamethylenetetramine. Soluble 1 in 10 of water, and about 1 in 20 of alcohol 90 per cent. Is employed in urethral diseases and cystitis.

Tablets weigh 7½ grains.—P.J. ii./03,764.

Chinotropine, Urotropine Quinate, Quinotropine.

Dose.—Up to 90 grains (6 Gm.) daily.

A combination of Quinic Acid and Urotropine. Used as a uric acid solvent. Is considered to liberate formaldehyde internally, and to form very soluble compounds with uric acid.

Tannopine.—*Syn.* TANNOL.

A compound of tannin and urotropin, a brown powder, antiseptic and astringent, for urinary ailments.—B.M.J.E. ii./98,47.

Insoluble in water but soluble in dilute alkaline solutions.—B. & C.D. i./99,185; P.J. i./99,336.

PIPERINUM. U.S.

Dose.—1 to 10 grains (0·065 to 0·65 Gm.).

A crystalline principle obtained from black and long pepper, the fruits of *Piper nigrum* and *Piper longum*, in large colourless prisms, which turn yellow with keeping. Insoluble in water, soluble in alcohol, and less soluble in ether. Almost tasteless, but its spirituous solution has a peppery taste. The pungency of pepper is not due to Piperin. It has been used in conjunction with eucalyptol for neuroses and congestion of the spleen.

Its febrifuge action is energetic, but it neither changes, retards, nor suppresses any secretion or excretion.

Ague cured by 18 grains daily.—B.M.J. ii./86,449.

PISCIDIA.
Jamaica Dogwood.

The bark of the root of this tree, *Piscidia erythrina*, is employed in the West Indies to intoxicate fish. In America it is employed to relieve toothache, and as a general sedative; it is said to be specially useful in allaying the cough of bronchitis and phthisis; does not interfere with expectoration, or lower the vital force. It is said to be an effective remedy for dysmenorrhœa, to allay pain, spasm, and nervous excitement, and to produce sleep. It dilates the pupil.

Extractum Piscidiæ. An alcoholic extract.

Dose.—2 to 5 grains (0·13 to 0·32 Gm.).

Extractum Piscidiæ Liquidum.

Dose.—20 minims to 2 drachms (1·2 to 7 Cc.).

One drachm equals 1 drachm of the bark Is a good narcotic, does not cause headache or constipation.

PIX LIQUIDA.

Tar (*Off.*). Known in commerce as Stockholm Tar, obtained by the destructive distillation of the wood of *Pinus Sylvestris* and *Pinus Palustris*.

Dose.—2 to 10 grains (0·13 to 0·65 Gm.) in a pill with lycopodium, or in perles.

As a diuretic and in bronchial catarrh and winter cough, it is very useful, and has been given for gastro-intestinal catarrh.

On account of their antiseptic properties, both Wood and Coal Tar and preparations of them have been used for surgical dressings. The former yields Creosote, which is a much more powerful although a less manageable germicide than the carbolic acid or cresylic acid contained in the latter. **Tenax,** a fine carded oakum is sold in 1-lb. packets.

Aqua Picis. Tar Water.—*Syn.* Aqua Picea; Eau de Goudron (Codex 1884).

Tar 1, Pine Sawdust 3. Mix and add Distilled Water 200. Macerate, with frequent shaking, for 24 hours, and filter. *Dose.*—5 to 10 ounces (140 to 280 Cc.).

Emplastrum Picis. (*Off.*).

Contains half its weight of *Burgundy pitch*, the resinous exudation from the stem of *Picea excelsa* melted and strained.

Oleum Picis Rectificatum, Light Oil of Tar.

Two distilled oils of Wood Tar are met with in commerce, one light, known also as Rectified Spirit of Tar, having Sp. Gr. 0·853 to 0·867, is colourless when fresh, but becomes sherry-coloured with age; this is a most powerful deodoriser, and is used for making Coster's paste *v.p.*320. The other is an opaque black dense oil heavier than water.

Perles of Tar.

Dose.—1 or 2. The Tar is enclosed in small globular capsules, containing about 2½ grains in each.

Pilula Picis Liquidæ.

Dose.—3 to 6 grains (0·2 to 0·4 Gm.).

Tar 2, Lycopodium 1. Useful for winter cough.

Syrupus Picis Liquidæ, Syrup of Tar, U.S., B.P.C. *Dose.*—1 to 2 drachms (3·5 to 7 Cc.).

Tar 75 (previously mixed with white sand 100 and washed with cold water 150, during 12 hours), stir with Boiling Water 400 for 15 minutes, add Glycerin 100, and after 24 hours filter, dissolve Sugar 800 in filtrate with gentle heat, cool, strain, and add Water to 1,000.

Taste may be covered by addition of an equal quantity of syrup of wild cherry (*v.p.*431); $\frac{1}{33}$ to $\frac{1}{10}$ grain of apomorphine hydrochloride may also be added to each dose. Useful in chronic bronchitis and winter cough.

Syrupus Picis cum Codeina. Ph. Helv.

Contains Codeine 1, with Proof Spirit *q.s.* in 1000 of Syrup of Tar.

Dose.—½ to 2 drachms (1·8 to 7 Cc.).

Unguentum Picis Liquidæ. Tar Ointment (*Off.*).

Tar 5, Yellow Beeswax 2. Useful in psoriasis.

For use in skin diseases, four special kinds of Tar, imported from Germany, are met with. Unlike common Tar, they are perfectly liquid. They are also known as empyreumatic or pyroligneous oils, viz.:—

Oleum Betulæ Pyroligneum. Birch Tar.

Oleum Cadinum. Oil of Cade (*Off.*).—*Syn.* Juniper Tar Oil. Oleum Juniperi Pyroligneum. Huile de Cade. From *Juniperus*

Oxycedrus and some other species. Commercially, is said now to be made by distilling Oils of Turpentine and Juniper with chips and twigs of Juniper.

Unguentum Olei Cadini. *Adopted by G.H.*

Melt Yellow Beeswax 1, add Huile de Cade 1, and stir till cold. Used in psoriasis and dry eczema. Similar ointments may be made of the other Tars, the proportions may be varied and lard may be used as a diluent if a weak ointment be required.

Chronic eczema may be cured by an ointment of Oil of Cade 1, Vaseline 4.

An ointment of Glycerin of Starch 100, Oil of Cade 100, Green Soap (*v.p.*469) 5, has been recommended for psoriasis.

Oil of Cade added to baths useful in psoriasis.—B.M.J. i./02,19.

Oleum Fagi Pyroligneum, Beech Tar. On the Continent used as a source of creosote.

Linimentum Picis (Lassar).

Beech Tar 4, Birch Tar 3, Olive Oil 1, Alcohol (70 per cent.) 1.

Oleum Rusci Pyroligneum. Said to be obtained from **Butcher's Broom.** Is really a Birch Tar, identical with *Oleum Betulæ Pyroligneum.*

These Tars have similar properties for forming ointments for skin diseases; their odour is less disagreeable, they are cleaner, and they are thought to be more efficacious than common Tar. The Birch Tar is esteemed on account of its peculiar odour, well known in Russia leather. Oleum Cadinum (Huile de Cade) is the most used. They are all soluble in oils, fats, wax, unctuous petroleum, and chloroform, but do not perfectly blend with alcohol.

Unguentum Rusci Compositum. — Oleum Rusci 1, Calamine 1, Lanolin 2, Unguentum Resinæ 3.

Is suitable for chilblains, eczema, prurigo, and psoriasis, and for irritation due to piles.

Resinol Ointment and Soap. Proprietary preparations recommended for skin eruptions and inflammations.

PODOPHYLLIN.

Syn. PODOPHYLLI RESINA (*Off.*).

Dose.—$\frac{1}{4}$ to 1 grain (0·016 to 0·065 Gm.) as a cholagogue and aperient.

Since it attacks the intestinal epithelium it acts well in removing ankylostoma and other intestinal worms.—B.M.J.E. i./04,48.

The resin obtained from the dried rhizome of *Podophyllum peltatum*—American mandrake, or May apple, sometimes called vegetable mercury, as it is a powerful biliary purgative. It is a pale greenish-brown amorphous powder, with an herby odour and acrid taste, soluble in aqueous ammonia, almost entirely soluble in 90 % alcohol, leaving undissolved not more than 10 per cent. inorganic and organic impurity.

Podophylli Indici Rhizoma and **Podophylli Indici Resina, I.C. Add.**, *v.p.*xxii. From *P. Emodi.* This resin is richer in Podophyllotoxin than than that from *P. peltatum.*

Podophyllotoxin. Is the principal constituent of Podophyllin. It is more certain in its action than Podophyllin and is given in dose of $\frac{1}{10}$ to $\frac{1}{3}$ grain, to children $\frac{1}{60}$ to $\frac{1}{30}$ grain. It is best administered by dissolving 1 grain in 2 drachms of 90% alcohol. Dose, 8 to 20 drops in a teaspoonful of syrup.

Pilula Podophyllin.

$\frac{1}{4}$ or $\frac{1}{2}$ grain of the resin in each, well triturated with milk sugar, acacia, and syrup *q.s.*, to one pill.

Tablets $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{1}{2}$ grain (0·008, 0·016 and 0·032 Gm.)

Pilula Podophyllin Composita.

Podophyllin $\frac{1}{4}$ grain, Barbados Aloes 1 grain, Capsicum $\frac{1}{2}$ grain, Green Extract of Belladonna $\frac{1}{4}$ grain, Excipient *q.s.* To make one pill. One or two form a biliary aperient dose. **St. Th. H.** has Podophyllin $\frac{1}{4}$ grain, Calomel 1 grain, and Alcoholic Extract of Belladonna $\frac{1}{6}$ grain.

Pilula Podophyllin et Quininæ.

Quinine Sulphate 1 grain, Podophyllin $\frac{1}{12}$ grain, Milk Sugar $\frac{1}{12}$ grain, Green Extract of Belladonna $\frac{1}{6}$ grain Extract of Socotrine Aloes 1 grain. To make one pill, or, i the quantities be taken in grammes, 15 pills. In making these pills, let the podophyllin be well triturated with the milk sugar and then with the quinine. They are useful 'dinner pills,' and must be taken *with* food.

Dinner Tablets.

These are similar to the above pills, and are recommended not coated for prompt action.

Tinctura Podophylli (*Off.*).

Podophyllin 1 grain, Alcohol (90 %), 30 minims.

Dissolve and filter. *Off. dose.*—5 to 15 minims (0·3 to 0·09 Cc.).

In dose of 2 to 4 drops in tea or coffee, taken night and morning, is useful in sick-headache and biliousness, where the bowels and liver are sluggish in worried and overworked patients, and in chronic diarrhœa with cutting pains and high-coloured motions. Also relieves constipation with clay-coloured motions following diarrhœa of infants, 1 or 2 drops on sugar twice or three times a day.—R. Its taste is acrid and disagreeable.

Tinctura Podophyllin Ammoniata.

Podophyllin 1, Aromatic Spirit of Ammonia 50. Dissolve, and after standing, decant.

Dose.—10 to 20 minims (0·6 to 1·2 Cc.) as a purgative and cholagogue, taken in a wineglassful of water or milk. Good Podophyllin dissolves almost entirely in spirit of sal volatile. This tincture has an advantage over the other tinctures of Podophyllin of forming a solution from which, on addition to water, the resin does not separate. The sal volatile also acts as a corrective.

Chologen Tablets are said to contain mercury and podophyllin, and are recommended to dissolve gall stones and check chole-lithiasis.

POTASSIUM.

Potassa cum Calce, P.L., consists of equal parts, in powder, of caustic potash and quicklime; it is also sold moulded into pencils. For **Vienna Paste,** *v.p.*479.

Potassii Bichromas, Potassium Bichromate. (*Off.*).

Dose.—$\frac{1}{10}$ to $\frac{1}{5}$ grain (0·0065 to 0·013 Gm.), in pill with Kaolin Ointment, for dyspepsia and gastric ulcer.—L. i./94,923; ii./95,671.

Capsules contain $\frac{1}{10}$, $\frac{1}{6}$ and $\frac{1}{4}$ grain.

Müller's Fluid.

Potassium Bichromate $2\frac{1}{2}$, Sodium Sulphate 1, Water 100. Dissolve with heat. Is used in histology for hardening tissues.

Potassium Chloride has been advocated for use in place of table salt by gouty and rheumatic individuals.

Potassii Citras (*Off.*).

Dose.—10 to 40 grains (0·65 to 2·6 Gm.).

A white powder obtained by neutralising citric acid with potassium carbonate. It has diaphoretic, diuretic, and febrifuge properties.

'Vescettes' of Potassium Citrate, 15 grains (1 Gm.).

To be crushed and taken in a draught of warm water.

Potassii Cyanidum, Potassium Cyanide.

Official as a test, in fused masses. No dose is mentioned, but $\frac{1}{12}$ to $\frac{1}{4}$ grain (0·0054 to 0·016 Gm.), of the crystallised salt may be given; a solution of one grain of the crystals in 23 minims ($20\frac{10}{13}$ grain-measures) of distilled water is equivalent in strength to Acidum Hydrocyanicum Dilutum (2 per cent.), in place of which it is sometimes used.

Potassii Iodidum. (*Off.*). White or colourless cubic crystals soluble in less than its own weight of water, and in 12 parts of Alcohol 90 per cent. This salt is incompatible in solutions with Spiritus Ætheris Nitrosi, Salts of Iron (except Ferri et Ammonii Citras and Liquor Ferri Acetatis), Salts of Bismuth, and with Liquor Strychninæ Hydrochloridi.

Skin eruptions caused by this and Bromides.—L. i./03,644.

Tablets and **Capsules** contain 5 grains.

Potassii Nitras, Potassium Nitrate (*Off.*). *Syn.* NITRE. *Dose.*—5 to 20 grains (0·32 to 1·3 Gm.).

Fumus Potassii Nitratis (Nitrated Papers); Charta Nitrata.

Are made by soaking white blotting-paper with solutions of Nitre, 60 grains in an ounce, and drying. To relieve asthma these are burnt and the fumes inhaled.

Asthmatic Pastilles are prepared in cones containing a mixture of chlorate and nitrate of potassium.

Ozone Papers are similar in composition.

In addition to the above, various powders and cigarettes are sold as nostrums, the fumes of which while burning are employed to relieve attacks of asthma, of which Nitre is a constant and Stramonium is generally an ingredient; Himrod's Cure, Bliss's Cure, and the Green Mountain Cure resemble the following:—

Pulvis Lobeliæ Compositus.

Potassium Nitrate 240, Boiling Distilled Water 240. Dissolve and add to Lobelia in powder, Stramonium Leaves in powder, Black Tea in powder, 240 of each. Mix well, dry, and add Oil of Anise 1. The fumes of half a teaspoonful or more, burnt on a plate, to be inhaled six or eight times a day, and the bedroom fumigated with the same.

Folia Stramonii Nitrata, *Arzn.*

Stramonium Leaves 2, moistened with Potassium Nitrate 1 dissolved in Water 3, and dried.

Ophthalmic discs contain $\frac{1}{500}$ grain (0·00013 Gm.) potassium nitrate combined with gelatin.

Effervescent Potassic Aperient.

Dose.—One teaspoonful in half a tumbler of warm water.

A preparation containing Potassium Sulphate, Magnesium Sulphate and Sodium Bicarbonate, with Citric and Tartaric Acids. Suggested as an alternative to Sodio-Magnesian Aperient (p.483.).

Effervescent Potassic Aperient with Potassium Sulphocarbolate.— *Dose* (as above).

1 drachm contains in addition to the above 10 grains of the Sulphocarbolate. Is useful where gastric and intestinal fetor are present.—Colin Campbell.

Potassii Nitris.

Dose.—$\frac{1}{4}$ to $1\frac{1}{2}$ grains (0·016 to 0·1 Gm.).

A crystalline deliquescent powder and also supplied in sticks. It is a vaso-dilator, improves the cerebral circulation and is given for migraine, asthma and epilepsy.

Pulvis Potassii Nitritis Compositus.

Potassium Nitrite $\frac{1}{2}$ grain, Potassium Nitrate 18 grains, and Potassium Bicarbonate 25 grains; mix and dispense in parchment paper. This dose may be given every morning in a tumbler of water to reduce blood pressure; it has a diuretic action. Has thus checked recurrent epistaxis. Should be tried for gout.—L. ii./02,331.

Potassii Phosphas, Dipotassic Hydric Phosphate.

A deliquescent granular powder; is given as an alterative in phthisis and urinary affections. *Dose.*—1 to 10 grains (0·065 to 0·65 Gm.).

Potassii Succinas, Potassium Succinate.

A deliquescent powder; has been used in doses of 5 to 10 grains to control hæmorrhage. **Ferri Succinas,** Ferric Succinate, a reddish-brown insoluble powder, removes biliary calculi and relieves hepatic colic.

Sal Polychrestum. *Syn.* **Glaser's Salt.**

Dose.—30 to 120 grains.

A mixture of Potassium Sulphite and Sulphate, has a sulphurous odour, has been given for dyspepsia and for chronic skin diseases.—B.M.J. ii./03,499.

Potassii Tartras Acidus. (*Off.*) *Syn.*—PURIFIED CREAM OF TARTAR.

Dose.—20 to 60 grains (1·3 to 4·0 Gm.).

Consists of the Crude Tartar deposited during the fermentation of wine—recrystallised. A white powder with acid taste soluble 1 in 200 of water. This salt is used to prepare Haustus Imperialis K.C.H., **Imperial Drink,** which contains 1 in 160 of water, with Tartaric Acid 1, sugar 16, and Lemon Oil 12 minims to the gallon.

Potassii Telluras.

Dose. —$\frac{1}{3}$ grain (0·02 Gm.) in pill once daily.

Arrested or greatly reduced night-sweats of phthisis; day-sweats required rather larger doses. Indigestion only followed continuance of 1 grain daily.—L. ii./90, 365; i./92,657; Pr. xlv.373; P.J. 1890,164.

PRUNI VIRGINIANÆ CORTEX (*Off.*).

Syn.—WILD CHERRY BARK, U.S.

The bark of *Prunus serotina* contains amygdaline; on distillation with water it yields an essential oil rich in hydrocyanic acid; on simply moistening the bark with water, the odour of the latter is developed *vide* also *p.*80. It possesses bitter tonic properties, with more or less sedative ones. The preparations in use—the tincture and syrup—form agreeably flavoured medicines, which are used to palliate the cough in phthisis and bronchitis, n palpitation of the heart, and debility, particularly of the digestive organs.

Two spurious barks have been found—one probably nearly allied to P. Avium, the syrup prepared from both fermented in three weeks.—B. & C. D. i./04,243.

Syrupus Pruni Virginianæ (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Virginian Prune Bark, in No. 20 powder, 3; Sugar, n coarse powder, 15; Glycerin 1·25, Distilled Water *q.s.* to 20.

Moisten the powder with water and macerate for 24 hours in a closed vessel, then percolate, adding more water until 9 of liquid are obtained, in which dissolve the ugar without heat. Add the glycerin, strain, and pour distilled water over the strainer, *q.s.* to 20.

Tinctura Pruni Virginianæ (*Off.*).

Dose.—30 to 60 minims (1·8 to 3·5 Cc.).

Virginian Prune Bark, in powder, 8; Distilled Water 5. Macerate 24 hours in a closed vessel, and add alcohol (90 per cent.), 25. Macerate 7 days more, express and filter.

PTOMAINES.

Under this name are classed a number of basic substances which are produced in meat, fish, and albuminoid food undergoing putrefaction by decomposition or by bacterial metabolism. In their chemical and physiological properties they are akin to the alkaloids, several being dangerous poisons. Hence the occasional outbreaks of ptomaine poisoning from the consumption of meat pies, fish, and the like.

Symptoms are those of gastro-intestinal irritants but hey may resemble those of Atropine poisoning. Dryness of the tongue, thirst, dilated pupils, debility with prob- bly rigors, diarrhœa, sickness with offensive stools, high emperature, sickness with convulsions.

Tyrotoxicon occurs in stale cream, cheese, milk products; causes vomiting, purging, rapid pulse, dyspnœa, depressed temperature and prostration.

Antidotes.—Give emetics and Castor Oil, then stimulants. Amyl Nitrite, Strychnine Digitalis, Caffeine, Sal Volatile, Tannic Acid, and Atropine hypodermically.

For **Fish Poisoning** give Potassium Chlorate or Liquor Ammoniæ Acetatis; also Tinctura Capsici, and Spiritus Chloroformi.

Presumed Ptomaine poisoning from tinned fish.—L. ii./03,755,848.

PULSATILLA.

Pulsatilla nigricans, Störck, or *Anemone pratensis*, L. and *Pulsatilla vulgaris*, Mill, or *A. Pulsatilla*, L. (these two plants are by some botanists considered varieties of one species), pasque flower, meadow anemone or windflower.

The flowering herb imported principally from Germany.

Anemonin. Pulsatilla Camphor.

Dose.—$\frac{1}{60}$ to $\frac{1}{12}$ grain (0·001 to 0·0054 Gm.).

In white crystals, easily crumbled, sparingly soluble in water or ether, more soluble in alcohol. Has been given for dysmenorrhœa and epididymitis.

It irritates, then paralyzes, the respiratory centre, and diminishes cardiac activity and voluntary movements by acting on the spinal nerve centres. Useful in bronchitis with convulsive cough, pertussis, asthma, and orchitis.

Tinctura Pulsatillæ, B.P.C.

Pulsatilla, in No. 20 powder, 1, Alcohol 60 per cent. *q.s.* to make 10 by percolation.

Dose.—1 to 5 minims (0·06 to 0·3 Cc.) or more; for amenorrhœa or dysmenorrhœa, a minim every hour or two hours, a day or two before periods.

Pulsatilla paralyzes the medulla oblongata and spinal cord, and excites irritation of the digestive tract and the kidneys.

It is also used in catarrh of the air-passages with spasmodic cough, and some rheumatic affections. 1 to 10 of water is used as a lotion to the mucous membrane where there is a discharge of a muco-purulent character, especially useful in leucorrhœa.

Recommended in treatment of inflammation of the testes, cord, and epididymis.—B.M.J. i./86,98.

PYRIDINA.

Dose.—5 to 10 minims (0·3 to 0·6 Cc.) daily, increased.

A base, forming salts with acids, obtained from bone-oil and many organic substances by dry distillation and subsequent purification. It is a colourless liquid with a persistent empyreumatic odour, miscible with water, alcohol, ether, and oils; boils at 243° F.; is contained in and combined with nicotine in the fumes of tobacco, and M. Sée thinks it is probably the relieving agent of various cigarettes and powders smoked or burnt for asthma. It relieves the dyspnœa of asthma and whooping cough. A drachm of it is placed on a plate in a small room, in which the patient remains from 20 to 30 minutes three times a day. The respiration becomes easy, and, after a few sittings, the disease is generally much relieved.

It has been used as a heart stimulant; and is valuable in angina pectoris and cardiac failure.

QUEBRACHO CORTEX.

The bark of *Aspidosperma Quebracho*, imported from the Argentine Republic, is met with in pieces about ¾ inch thick, with a fibrous cinnamon brown-coloured interior, breaking with a short fracture, and having a warty, reddish ochre-coloured suberous exterior. It has a bitter, slightly aromatic taste. It contains the alkaloid Aspidospermine and other principles.

Aspidospermine Sulphate (Fraude), in dose of $\frac{1}{64}$ to $\frac{1}{32}$ grain (0·001 to 0·002 Gm.) hypodermically appears to lower temperature in typhoid where quinine fails.

Tinctura Quebracho.

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.) or more.

Is prepared 1 in 5 of alcohol 60 per cent.

Extractum Quebracho Liquidum, P. Aus. Add. 1 = 1 of bark.

Dose.—5 to 10 minims (0·3 to 0·6 Cc.).

QUINETUM.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.) or more.

The mixed alkaloids, in amorphous greyish white powder, obtained from red cinchona bark, *Cinchona succirubra*, slightly soluble in water, but readily and perfectly dissolves in it with the aid of a dilute acid. It consists principally of cinchonidine (50 to 70 per cent.) with some quinine, cinchonine, &c.; is cheaper than quinine.

Quineti Sulphas, Quinetum Sulphate.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.) or more.

The crystallizable sulphates of the preceding, in acicular crystals resembling quinine, slightly soluble in water, but readily dissolves with the aid of an acid. May be given in pills or in aqueous solution with acid and tincture of orange. It is not nauseously bitter.

In ague 10 to 15-grain doses act as well as quinine, and do not produce deafness.

QUINIDINÆ SULPHAS.

Dose.—1 to 20 grains (0·065 to 1·3 Gm.).

Quinidine is an alkaloid obtained from cinchona, principally from Pitayo and Cuprea barks. The sulphate is in white acicular crystals very like quinine sulphate. Soluble in 100 of water, 1 in 32 of absolute alcohol, rendered more soluble in water by the addition of acid—a minim or more of diluted sulphuric acid to a grain—may be dispensed thus, or 5 parts of the sulphate with one of glycerin of tragacanth in pills. Its solution is fluorescent, but dextrogyrate, and, like quinine, with which it is isomeric, its solution produces an emerald-green colour with chlorine water and ammonia. Quinidine salts are powerful antiperiodics, equal to those of quinine, to which they stand next in market value. Quinidine Sulphate is suitable for administration to children, being less bitter than the other cinchona alkaloids.

QUININA.

Dose.—1 to 4 grains (0·065 to 0·26 Gm.) or more (if anhydrous, 3 parts are equal to 4 of sulphate).

The most valued alkaloid obtained from cinchona barks,—is a very bitter, white, or, if well dried, greyish white amorphous powder, slightly soluble in water, soluble in ether, alcohol, chloroform, and dilute acids. Soluble also in aqueous ammonia. Its solution in diluted sulphuric acid is fluorescent, lævogyrate, and gives, with solution of chlorine and ammonia afterwards added, a characteristic emerald-green colour due to thalleioquin.

Acidum Quinicum.—*Syn.* KINIC ACID.

Dose.—4 to 8 grains (0·26 to 0·52 Gm.).

An acid contained in Cinchona, principally combined with the alkaloids and with calcium, is met with in white crystalline masses, soluble in water about 5 in 6, and in alcohol 90 per cent. 1 in 35. It is decomposed into hippuric acid in the system, and reduces the uric acid output. Employed in gout and rheumatism.

Relieved gout after years of pain.—B.M.J. i./01,940.

A specific for gout.—B.M.J.E. i./01,56; ii./02,31.

Urosin Tablets, 8 grains, are a Quinic Acid and Lithium compound; one several times a day; are used to check gout.—P.J. i./99,446.

Quininæ Arsenas, Quinine Arsenate.

Dose.—⅛ to ½ grain (0·008 to 0·032 Gm.) in a pill.

Is in small white acicular crystals, sparingly soluble in cold water. Medicinally, its arsenic is about one-tenth that of arsenious acid. It is an antiperiodic, given in chronic malarial fevers. Contains about 30 per cent. of arsenic acid, and 69·4 per cent. of quinine.

Quininæ Chloras, Quinine Chlorate.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.) in pill.

In slender white needles, slightly soluble in water.

Quininæ Citras, Quinine Citrate.

Dose.—1 to 5 grains (0·065 to 0·032 Gm.) in pill with glycerin of tragacanth, or slightly powdered and suspended in water, in which this salt is sparingly soluble—1 in 900—has, therefore, little taste in this form. It is in acicular crystals like the sulphate.

Effervescent Quinine Citrate. *Dose.*—1 drachm, or more.

Contains 1 grain in 1 drachm.

Ferri et Quininæ Citras (*Off.*).

Dose.—5 to 10 grains (0·32 to 0·65 Gm.) in solution, or in pills with simple syrup or mucilage of acacia (not in excess, as, unless made very hard, they lose shape). This preparation contains about 15 per cent. of quinine, is in greenish golden scales, slightly deliquescent and very soluble in water. It has an agreeable bitter, chalybeate taste.

Effervescent Citrate of Iron and Quinine.
Dose.—1 drachm (4 Gm) = 3 grains of the salt.

Tablets of Iron and Quinine Citrate, 3 grains.

Syrupus Ferri et Quininæ Citratis.
Dose.—1 drachm (3·5 Cc.) or more.
1 in 20 of Syrup of Orange.

Ferri, Quininæ et Strychninæ Citras (*v.p.*493) is the former preparation, with 1 per cent. of strychnine added.

Quininæ Hydrobromidum, Quinine Bromide
Dose.—1 to 5 grains (0·065 to 0·32 Gm.) or more.

In white acicular crystals, smaller than the sulphate, and much more soluble in water (1 in 45). Contains 76·6 per cent. of Quinine. Quinine is given with an excess of hydrobromic acid to lessen the cinchonism sometimes caused by large doses. Is valuable in acute rheumatism.

Tablets contain 3 and 5 grains.

Tablets of Quinine Hydrobromide, 3 grains (0·2 Gm.), with Phenacetin, 5 grains (0·32 Gm.), are prepared.

Hypodermic Tablets of **Quinine Hydrobromide** contain ½ grain.

Quininæ Hydrobromidum Acidum.
Dose.—½ to 2 grains (0·032 to 0·13 Gm.) hypodermically.

In yellowish rectangular prismatic crystals, or in powder. Contains 60 per cent. of Quinine. Soluble 1 in 7 of water, and is well adapted for hypodermic injection. It is entirely unirritating.

The hydrobromic radical tends to prevent quinism.

Injectio Quininæ Hydrobromidi Acidi Hypodermica. 1 grain in 6 minims.

Dose.—3 to 12 minims (0·18 to 0·7 Cc.). Useful in ague where quinine cannot be borne by the stomach; a very much smaller dose of this will act than that required to be given by the mouth.

Very useful in malaria and rheumatism originating from this fever. Better than Quinine *per os*. Should be injected once prior to fever setting in, and five or six times afterwards.—B.M.J. i /02,439.

Quininæ Hydrochloridum (*Off.*).

Dose.—1 to 10 grains (0·065 to 0·65 Gm.).

In acicular white crystals generally larger than the sulphate, soluble 1 in 40 of water, 1 in 3 of 90 per cent. alcohol.

Is richer in alkaloid than the sulphate; contains 81·8 per cent. against 73½ per cent. in the sulphate. An emulsion of this salt, 1 in 60 with cod liver oil, is recommended for dressing burns, chronic ulcers and intertrigo.—L. i./02,443.

Injectio Quininæ Hydrochloridi, U.C.H.

Ear injection, 4 grains to 1 ounce.

Pessus Quininæ.—Contains 3 to 5 grains of Quinine Hydrochloride.

A valuable remedy for leucorrhœa.—L. i./99,26.

Tablets, 1, 2, 3, 4, and 5 grains. Dose as Quinine Hydrochloride.

Tinctura Quininæ (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Quinine Hydrochloride 1, tincture of fresh orange 50. A very agreeable form of taking small doses of Quinine. Hydrochloride of Quinine is used in place of Sulphate, as suggested by the late W. M.

Vinum Quininæ (*Off.*).

Dose.—½ to 1 ounce (15 to 30 Cc.).

Contains one grain of Quinine Hydrochloride dissolved in one ounce of orange wine.

Quininæ Hydrochloridum Acidum. (*Off.*).

Dose.—1 to 10 grains (0·065 to 0·65 Gm.), ½ to 2 grains (0·032 to 0·13 Gm.) hypodermically.

In white or yellowish white crystalline crusts. Is claimed to be soluble 1 in 1 of water. Contains 72 per cent. of quinine. 1 grain in 6 minims is suitable for hypodermic injection. Recommended in cholera.—B.M.J.E. ii./92,55.

Tablets 1, 3 and 5 grains.

Tablets, Hypodermic, contain 1, 2, 3 grains.

Quininæ et Ferri Chloridum.

Dose.—1 to 3 grains (0·065 to 0·2 Gm.).

Is in the form of brown scales, soluble 5 in 4 of water, and 1 in 50 of alcohol 90 per cent. As a hæmostatic is employed in powder and in concentrated solution.

Quininæ Hydrochloro-Sulphas.

Dose.—1 to 10 grains (0·065 to 0·65 Gm.).

In masses of small needles, or reduced to powder containing 74·3 per cent. of alkaloid, and soluble 1 in about 2 of water.—L. ii./92,1142.

Injection in inoperable cancer of the uterus with good results.—B.M.J.E. i./03,26.

50 injections of 2 grains (0·12 Gm.) increased to 4 grains into an inoperable cancer of the breast improved general condition of the patient.—Bulletin Médicale, 1901, No. 15, p. 173.

Injectio Quininæ Hydrochloro-Sulphatis Hypodermica, 1 grain in 4 minims.

Dose.—2 to 12 minims (0·12 to 0·7 Cc.).

Quininæ Hydrochloro-Carbamidum. — *Syn.* UREA-QUININE.

Dose.—5 to 15 grains (0·32 to 1 Gm.).

In small prisms, soluble 1 in about 1 of water. Is not rich in alkaloid. Used for hypodermic injection in cholera, in 12 to 15-grain doses.—B.M.J.E. ii./93,7.

Quininæ Iodas, Quinine Iodate.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

In white silky needles, soluble 1 in about 250 of water.

Quininæ Hydriodidum, *Syn.* QUININE IODIDE.

Dose.— 1 to 5 grains (0·065 to 0·32 Gm.).

Is in minute pale-primrose coloured crystals, slightly soluble in water.

Quininæ Hydriodidum Acidum. *Syn.* QUININÆ IODIDUM ACIDUM, ACID QUININE IODIDE.

Dose.—1 to 4 grains (0·065 to 0·26 Gm.).

Is in golden acicular crystals, freely soluble in water. Must be kept from the light. A saturated solution (about 2 grains in an ounce) in syrup of ferrous iodide forms **Syrupus Ferri et Quininæ Iodidi.**

Dose.—1 drachm (3·5 Cc.).

Quininæ Lactas, Quinine Lactate.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.), or more.

In commerce is found as a granular white amorphous powder, soluble 1 in 10 of water; said to be well tolerated. Contains 78·2 per cent. of quinine. Is very suitable for hypodermic injection. For gonorrhœa, 1 per cent. solution forms an excellent injection.

Quininæ Phosphas, Quinine Phosphate.

Dose.—1 to 6 grains (0·065 to 0·4 Gm.). Is in acicular crystals like the sulphate, but harder and denser. Contains 76·2 per cent. of quinine and is soluble 1 in 420 of water.

Quininæ Salicylas, Quinine Salicylate.

Dose.—2 to 6 grains (0·13 to 0·4 Gm.).

In white silky flexible acicular crystals, sparingly soluble in water, and soluble about 1 in 60 of alcohol 90 per cent. The addition of mineral acids only helps its solubility by liberating salicylic acid, which may crystallise out. Contains 70·1 per cent. of quinine. Should be administered suspended in water, or in cachets, or pills with syrup of glucose as an excipient. In 3-grain pills; recommended for diarrhœa and neuralgia.

Effervescent Quinine Salicylate.

Dose.—1 drachm or more.

Contains 1 grain in 1 drachm.

Tablets, 3 grains (0·2 Gm.). *Dose.*—1 to 2.

Capsules contain 5 grains (0·3 Gm.).

Useful in rheumatic gout, 3 grains every 6 hours.—L. i./8o,540,582; curative of zoster.—Pr. lxx.10.

Quininæ Sulphas, Quinine Sulphate (*Off.*).

This is the salt most largely manufactured and most cheaply and conveniently made. It contains 73·5 per cent. quinine.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.) as a tonic; 5 to 15 grains (0·32 to 1 Gm.) as an antiperiodic.

In slightly flexible acicular snow-white crystals, with a pure, intensely bitter taste. Soluble 1 in 800 of cold water, 1 in about 100 of 90 per cent. alcohol, 1 in 40 of glycerin, is precipitated from solution by tannic acid, alkalis and their carbonates, but redissolved by an excess of aqueous ammonia. It is generally prescribed in solution or pills. To render ordinary doses of it soluble in water, a dilute mineral acid in the proportion of at least one minim to each grain should be ordered, the sulphate should be moistened with a little water before the addition of the acid, particularly if this be sulphuric acid, the soluble acid salt formed will thus be held in solution, and this may be diluted *ad libitum.* Tincture of orange-peel agreeably harmonizes with and covers the bitterness of Quinine. Although incompatible with alkalis, it is often ordered in conjunction with aromatic spirit or carbonate of ammonia, which precipitate the alkaloid as a sticky mass on the sides of the bottle. To avoid this separation, some mucilage of acacia should be prescribed in the mixture, which prevents the aggregation of the alkaloid and holds it suspended in the liquid. In cases of fever, large doses are thought to be more efficacious with the sulphate of quinine not dissolved. It may be given in wafer cachets, or diffused in water if lightly powdered so as to break the crystals, but not to make them cake and adhere. It can be conveniently formed into pills by adding to 4 parts 1 of glycerin of tragacanth, carefully avoiding excess of the latter, or strong sulphuric acid in the proportion of one drop to five grains, makes a good pill. Its solution possesses antiseptic properties, and has a blueish fluorescence.

Capsules contain 1, 2, 3, and 5 grains.

To obviate possible quinine deafness, where large doses have to be given as in malaria, Hydrobromic Acid or one of the Nitrites is useful.—L. i./03,1448.

Quinine, locally applied, has an immediate and powerful influence in arresting suppurative process in hypopyon.—L.i./92,15.

Catarrh relieved by pills of quinine, atropine, and arsenic. These will frequently stop the development of a "cold." See p.106.

Quinine a cardiac stimulant in typhoid, phthisis, and pneumonia.—L.i./91, 930; P.J.1891,980.

The Ammoniated Tincture of Quinine is considered the best prophylactic against influenza.

Quinine useful in place of ergot for delay and hæmorrhage during labour; 8 grains followed by 4 grains in an hour, and a third dose if necessary, where no obstruction.—B.M.J. i./98,762.

Quinine solutions of 20 per cent. are dangerous for hypodermic use; crystals may form in the wound; tetanus has followed in cases in the French Colonial army.—B.M.J.E. i./02,63.

Collunarium Quininæ, Quinine Nasal Douche.

Quinine Sulphate 1, Water 875.

Dissolve by the aid of gentle heat. Used in hay-fever, a little is placed in the palm of the hand and drawn up through the nose. If a stronger solution be required the Acid Sulphate or Hydrochloride of Quinine should be used; an excess of acid for this purpose should be avoided.

Mistura Chlori cum Quinina (Burney Yeo).

To Potassium Chlorate, in powder, 30 grains, in a 12-ounce bottle, add Hydrochloric Acid 60 minims; cork and shake well to liberate chlorine; absorb this by gradually adding, and shaking after each addition, Distilled Water *q.s.* to 11 ounces; add Quinine Sulphate 24 grains (or 36 grains if ordered), Syrup of Orange 1 ounce. *Dose.*—1 ounce (30 Cc.). every 2, 3, or 4 hours for typhoid; it quickly cleanses the tongue.

Perles of Quinine Sulphate.

Contain 1½ grains (0·1 Gm.) in each.

Pilula Quininæ Sulphatis (*Off.*).

Dose.—2 to 8 grains (0·13 to 0·52 Gm.).

Quinine Sulphate 30, Tartaric Acid 1, triturate and add to Glycerin (by weight) 4, Tragacanth in powder 1, previously mixed. Pills of 1, 2, 3, 4 and 5 grains are prepared.

Tablets, 1, 2, 3, 4 and 5 grains.

Tinctura Quininæ Ammoniata (*Off.*).

Dose.—½ to 1 drachm (1·8 to 3·5 Cc.).

Quinine Sulphate 2, Alcohol (60 per cent.) 90; mix and add Solution of Ammonia 10. Is slightly stronger in Quinine than formerly, 1 grain in 1 drachm was used. The Quinine precipitates on addition to water; mixed with an equal quantity of syrup of orange-peel, it is palatable, keeps bright, and bears dilution better; it remains bright if mixed with aërated water. It is better kept in a dark place, else it darkens in colour.

Capsules of the above are prepared, each equivalent to 1 drachm.

Tinctura Antiperiodica. – *Syn.* **Warburg's Tincture, B.P.C.**

Socotrine Aloes 240 grains, Rhubarb 80 grains, Angelica Fruit 80 grains, Elecampane Root 40 grains, Saffron 40 grains, Fennel Fruit 40 grains, Prepared Chalk 40 grains, Gentian 20 grains, Zedoary Root 20 grains, Cubebs 30 grains, Myrrh 20 grains, White Agaric, in powder, 20 grains, Opium, in powder, 2½ grains, Black Pepper 4 grains, Cinnamon 8 grains, Ginger 8 grains, Alcohol (60 per cent.) 1 pint. Macerate for

7 days, press and strain. Dissolve in the product:—Quinine Sulphate 175 grains, Camphor 20 grains. After 3 days filter, add Alcohol 60 per cent. *q.s.* to 1 pint.

The originally published formula showed that it was a proof spirit tincture, containing Quinine Sulphate 1 in 50, Socotrine Aloes 1 in 40, Opium about 1 in 4,000, Rhubarb 1 in 125, Camphor 1 in 500 with several aromatics. As it is apt to purge as above prepared, the aloes may be omitted *if so prescribed.*

Dose.—1 to 4 drachms or more (3·5 to 15 Cc.).

Originally directed for Indian fever, ague, &c., half an ounce as a dose repeated in 2 or 3 hours; before giving the first dose the bowels should be freely opened, and no food recently taken. Between the two doses nothing should have been taken but a little brandy or beef-tea, and this only if the state of the patient required it.

In enteric fever and pneumonia was useful.—B.M.J. i./01,1339.

Quininæ Sulphas Acidus,

Dose.—1 to 10 grains (0·065 to 0·65 Gm.).

Usually met with in large rectangular prisms or masses of crystals; contains 59·1 per cent. of Quinine. Soluble 1 in 11 of cold water, and is therefore the most suitable salt for preparing eye lotions. Three grains to an ounce of water has a specific action on ophthalmic diphtheria. Malaria is well treated by injections of 4 grains daily for 5 days.—B.M.J. i./02,793.

Tablets, ½, 1, 2, 3, 4 and 5 grains.

Tablets called **Livingstone Rousers**, contain Quinine Acid Sulphate 1 grain, Jalap 1½ grains, Calomel 1 grain and Rhubarb 1½ grains; are given to check malarial poisoning.

Quininæ Sulphocarbolas.

Dose.—1 to 6 grains (0·065 to 0·4 Gm.) in pill with glycerin of tragacanth. One part of Quinine Sulphate and two parts of Absolute Phenol liquefy and form an oily colourless fluid. If hot aqueous solutions of the two are mixed in equivalent quantities, Quinine Sulphocarbolate separates on cooling. This salt is met with in commerce as an amorphous white powder, soluble 1 in 680 of water, 1 in 74 of 90 per cent. alcohol. The so-called Quinine Carbolate is generally a Sulphocarbolate as found in commerce.

Quininæ Tannas, Quinine Tannate, P.G.

Dose.—1 to 4 grains (0·065 to 0·26 Gm.). An amorphous yellowish white powder, obtained by the decomposition of the sulphate with a solution of tannin, contains 20 per cent. of Quinine and is slightly soluble in water. Being almost tasteless, is recommended for children, to be given in milk.

Quininæ Valerianas, **Quinine Valerianate.**

Dose.—1 to 4 grains (0·065 to 0·26 Gm.).

In white shining crystalline, odourless, rhomboidal plates, or, as more frequently met with in commerce, an amorphous white powder with a slight valerianic odour, contains 73 per cent. of Quinine, soluble 1 in 110 of cold water; best administered in pills given in nervous headache and hysteria.

Euchinin. *Syn.* **Euquinine.**

Dose.—3 to 15 grains (0·2 to 1 Gm.) in cachet.

A compound formed by the action of ethyl chlorocarbonate on quinine, in light masses of silky white needles, with little taste, sparingly soluble in water, more so by addition of dilute acid; easily soluble also in alcohol, chloroform, and ether. Suggested to replace quinine as having less taste and producing no unpleasant after effects.

Malaria, 5 cases, results as effective as quinine, but causes cinchonism.—B.M.J. i./98,551. May also be given in 4 grain doses twice daily as a prophylactic.—M./01,79.

In whooping-cough is of great value. — B.M.J.E. i./99,100.

Tablets contain 8 grains.

Aristochin. *Syn.* ARISTOQUININE. This is a diquinine carbonic ester, a white tasteless powder containing 96 per cent. of quinine. *Dose.*—8 to 15 grains (0·5 to 1·0 Gm.). Recommended for malaria, typhoid, influenza, and in small doses for pertussis.

Pilulæ Trium Valerianatum.

Pills containing 1 grain each of the Valerianates of Quinine, Iron, and Zinc. Are efficient nervine tonics.

Quinoidine.—*Syn.* CHINOIDINUM, P. Jap.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.) or more.

The mixed amorphous alkaloids, purified from resin, obtained as a by-product in preparing salts of cinchona alkaloids. It is a brownish-black, resinous-like substance, has a vitreous fracture, nearly insoluble in water, is dissolved by acid solutions, which deposit on dilution. Solutions either in boric or sulphuric acid are used as cheap febrifuges. The taste of these is very nauseous.

RADIOLOGY.

"X" Rays, discovered by **Roentgen** in 1895, are produced in a vacuum tube on the passage of an electrical discharge of high tension from a Ruhmkorff coil, at the point where the cathode rays (electrified particles emitted at a high velocity normally to the surface of the cathode) strike solid matter. In the old form of "X" ray tube this was the glass of the tube itself; in the new form (the invention of Jackson and others) the anti-cathode, which is also the anode and is usually of platinum, receives the rays from a concave cathode, which is of aluminium. They are focussed by its concave surface, and the "X" rays (ether vibrations or pulses) are propagated from the *front* of the platinum plate (which is set at an angle of 45° to the axis of the tube) in all directions into space. They possess the power of exciting phosphorescence and fluorescence, and they discharge a charged electroscope.

A large number of substances are almost *transparent* to the rays, *e.g.*, paper, leather, wood, soda-glass, mica, sulphur, indiarubber, cotton, wool and silk. Others, like bone and glass containing heavy metals, *e.g.*, lead, are *semi-opaque*. The metals are *opaque* in approximate proportion to their atomic weights—lead and platinum being almost entirely opaque, whilst aluminium is comparatively transparent. Iodine and Iodoform are very opaque.

Barium-Platino-Cyanide screens are fluorescent to the rays and render the shadows of the opaque bodies visible. They are made by coating cardboard or other suitable material with a film of Barium-Platino-Cyanide suspended in a solution of Celluloid in Amyl Acetate.

"X" ray tubes are often called "hard," *i.e.*, those with high penetrative power in which the resistance is great—and "soft," *i.e.*, with only slight penetrative power, hence producing a dull radiograph as the rays from it are stopped to the same extent both by flesh and bone. These differences are principally due to the different exhaustion of the tube, a very high exhaustion producing the hard effect, and one of only partial extent gives the soft or dull results; but the size of the electrode also affects the results, *e.g.*, a small cathode gives a high resistance and high penetration, and a large one the opposite effects. Best contrasts are obtained with a tube of medium softness.

Tubes are now made so that they can be regulated to any degree of softness, and are also automatically self regulating, so that when the resistance becomes too great, an alternative spark gap comes into play which liberates gaseous matter and thereby softens the tube.

In bi-anodal tubes an additional electrode of aluminium is fitted behind and to one side of the anti-cathode and is connected with it outside the tube by a piece of wire, this permits the passage of much heavier discharges, and the tube works "steadier." The glass of the tube is of soda-glass, but special bulbs, in which lead-glass is employed with the exception of a window which is of soda-glass, are used for the application of the rays in skin affections. These obviate the necessity of shielding the normal tissue from the action of the rays. Special shapes are also made for the application of the rays by ntroduction into the uterus.

The value of a tube depends on its solid construction and the definition of the radiograph produced at a distance of a foot. Exposures necessary with good photographic plates (special rapid plates are made for "X" ray work) have to be ascertained for the particular ube employed. It is stated that for the foot and ankle he exposure should be three times that necessary for he hand, and for the trunk ten times. The arms and egs below the knee require about four times that for he hand; the abdomen may require thirty times the uration necessary for the hand. Exposures rarely xceed 5 minutes.

DEVELOPER FOR PLATES (Thomas's):—

No. 1.

Hydroquinone	160 grs.
Sodium Sulphite	2 ozs.
Citric Acid	60 grs.
Potassium Bromide	40 grs.
Distilled Water to	20 ozs.

No. 2.

Sodium Hydrate	160 grs.
Water to	20 ozs.

This works satisfactorily. It does not stain the hands.

Equal quantities of these solutions are used for developing. Some employ the soda solution diluted so as to develop slowly, and thus produce better definition, but for routine work this improvement takes too long.

The following also gives good results:—

No. 1.

Metol	50 grs.
Hydroquinone	150 grs.
Citric Acid	20 grs.
Sodium Sulphite	2 ozs.
Water	20 ozs.

No. 2.

Caustic Soda	150 grs.
Water	20 ozs.

Equal quantities of Nos. 1 and 2 being employed Development is best conducted at 60° F.

As an aid to **Diagnosis** the "X" rays increas yearly in importance particularly in diagnosing pul monary tuberculosis, pneumothorax, pleurisy, tubercle aneurism, enlarged bronchial glands and for th detection of renal calculi.

Mackenzie Davidson (B.M.J. i./98,10) devised a apparatus for exact measurement and localisation o foreign bodies. Two exposures are made on the sam plate, the tube being moved right and left of a zer point on a scale, without the patient moving. O developing the plate the negative shows two shadow of the foreign body. From these, measurements ar taken by means of threads with a surface gauge; thi gives the exact depth of the foreign body below the skin Some prefer to work with two photographic plate instead of one as mentioned. This method is als employed for the measurements of bones, displacements and especially for pelvic measurements. The "cross thread localiser" is also useful for detection, localisatio and estimation of the size of foreign bodies in the eye ball and orbit. A piece of metal, less than a millimetr in diameter, can be detected in the eye. The remova of pieces of steel can be brought about by means of the electro-magnet.

The stereoscope applied to skiagraphs gives the object n relief and shows the true relation of the parts. A ube with good definition and which will allow of the hortest exposure is essential. The skiagraphs are taken rom different points of view after displacing the tube bout 6 centimetres. By practice it is possible to ombine stereoscopic pictures without the employment f a stereoscope.—B.M.J. i./98,372, ii./98,481,1669; X. Congrès Périodique Internationale d'Ophthalmologie, trecht, 14–18 August, 1899.

Treatment.

In the treatment of cancer—undoubted malignant umours—there is a marvellous melting away under the pplication of the rays, but sufficient time has not yet lapsed to designate such cases as cured.—Coley.

In lupus and rodent ulcer, however, definite cures ave been effected.

"X" rays are of great value in the treatment of upus.—L.i./03,105.

"X" rays in ophthalmic surgery—localising foreign odies, for rodent ulcer of the eyelids, for trachoma and annus.—L.i./03,579.

"X" rays in the diagnosis of lung disease.—B.M.J. /03,1433.

Treatment of lupus, rodent ulcer, and other skin fections with "X" rays and the Finsen Light and the vo combined, with satisfactory results. The mode of tion of "X" rays is not bactericidal. They appear act by retarding osmosis and causing a slow degenera- on of the cellular structure, probably due to leucocy- sis. Lupus vulgaris, especially the ulcerative form (on cers the drying effect is most marked), scrofuloderma, berculous osteitis, and tuberculous glands, rodent cers, epithelioma, keloid, sarcoma, lupus erythematosus, ne rosacea, actinomycosis, mycosis fungoides, Paget's sease, nævi, eczema, psoriasis, acne, favus, sycosis, ngworm, and hypertrichosis have been satisfactorily eated by "X" rays. The rays cause the absorption œdema.—B.M.J.i./03,1304.

"X" rays have the action of an irritant. The trition of the patient is improved by them with a ic and stimulating result. Of undoubted value in lupus and epithelioma. Has a pronounced effect on internal cancers. Of value after operation to prevent recurrence. Dermatitis within certain limits is desirable. A classification of diseases treated is given.—B.M.J. i./03,27.

Pseudo-leukæmia well treated.—New York Medical Journal, April, 1903.

Doubtful cures of carcinomata of the breast.—L.ii./03, 126,130,271.

Used to discover amount of pleural effusion.—L.i./04, 568.

High Frequency Current.

This consists of a condenser discharge through a coil of high self-induction, the resulting discharge being of very high rate of oscillation and of high voltage.

A new appliance for producing.—L.i./03,1247.

In dermatology, pruritus improved by. Eczema, good results. Effects partly due to the ozone produced.—B.M.J.E.i./03,24.

In nerve diseases.—L.i./03,734.

In trachoma.—L.i./03,237.

Warty growths on the face treated by 34 exposures of 5 minutes duration disappeared under the action of the rays.—L.i./03,105.

These waves modify the sensibility amounting almost to an anæsthesia. Their use is, practically speaking, painless. Pruritus, psoriasis, eczema, alopecia, zona, acne, impetigo, and lupus erythematosus have been treated with good results.—M.A. 1904,65

Curative results in lupus vulgaris, acne rosacea, and nævus, causing molecular disintegration of the growths.—B.M.J.E. i./04,39.

General tonic to the system. Relief of neuralgia, ataxy, neurasthenia.—L. i./04,725.

Dowsing Radiant Heat.

This treatment consists in employing the heat and light produced by a number of ordinary incandescent electric lamps within a shade or case, or specially covered bed of reflecting material.

Special arrangements are made for each limb, joint or part of the body. The dry hot air produces a local hyperæmia and so relieves painful joints, chronic rheumatism and rheumatoid arthritis. Machtzum also combines hyperæmia produced by steam with the action of intense light.

Finsen Lamp.

The concentrated light produced by this lamp is violet and ultra-violet. It is produced by an arc lamp in which the heat rays are cut off. Finsen's original lamp has been improved, and is known as the "Finsen-Reyn" lamp. It is portable, suitable for one patient at a time, and Finsen acknowledges its efficacy.—L.i./03,449.

A new form of lamp—small, automatic, working direct from the electric supply main.—L.i./03,531.

Lupus treated by.—L.i./03,591,661 ; B.M.J.i./03, 523,579.

Finsen records 800 cases of lupus treated in various parts of the body. He has also employed **Red Light** for preventing the pitting of small-pox.

Record of 18 cases of small-pox treated by the Red Light in this country with good results.—L. i./04,646.

Violet Light has also been employed. Cure of a case of chronic synovitis with effusion. Exposure of 25 minutes a day for 5 weeks.—Med. Woche, Sept. 2, 1902.

The rays obtained from carbon electrodes are more effective than those given off by iron ones. The current used in the lamp has a strength of 40 to 80 ampères and an E.M.F. of from 45 to 50 volts. Rock crystal lenses are employed which allow the complete passage of the ultra-violet light.—Finsen Light Institute at Copenhagen, L. ii./03,957.

Ozœna treated with good results by modified Finsen method. Cocaine and Adrenalin used to produce anæmia of the tissue, the fetor disappeared and the power of smell returned.—B.M.J.E. i./04,52.

Reflected Sunlight.

Sorgo, of Vienna, has treated laryngeal tuberculosis by the sun's rays reflected from a laryngoscopic mirror with success, but failed with syphilitic laryngitis.

RADIUM.

This element is obtained from Pitchblende residues—Pitchblende found in Johanngeorgenstadt, Joachimsthal in Bavaria, Cornwall, and other parts, being the chief source of Uranium for use in the arts. Radium is also present in the minerals Clèveite, Chalcolite, and others.

So far it has always accompanied Uranium compounds. It is doubtful whether the Cornish Pitchblende, though containing a large proportion of Uranium, is worth working up in the direction of Radium. Radium Bromide in the pure condition is the salt with which most work has been done, as the element in the free (basic) condition rapidly oxidises. This salt occurs in yellowish hard crystalline particles, and is usually supplied in hermetically sealed glass tubes. Becquerel in 1896 commenced the experiments which led up to M. and Mme. Curie's work, by discovering accidentally the radio-activity of Uranium-Potassium Sulphate. It was thought that possibly "X" rays always accompanied fluorescence, as they seemed to result from the fluorescence of the glass in the old form of "X" ray tube. Becquerel found that a photographic plate was affected by the Uranium compound through a sheet of copper in the dark without any previous "lighting" being necessary to produce fluorescence. This result had, in fact, nothing to do with fluorescence; it was a general property of Uranium compounds, whether fluorescent or not. The energy of this radio-activity is claimed by Professor Rutherford and Mr. Soddy to be due to change which the elements are undergoing; others are of opinion that it is due to some external force, at present unknown (the energy of Radium is generally taken to be about one million times that of Uranium; Radium will fog a photographic plate in a few seconds, whereas Uranium will take hours to produce a like effect). Radio-activity has to be considered as a new atomic property which is unalterable.

M. and Mme. Curie found by electrical means that Pitchblende possessed a radio-activity far greater than the Uranium Salts which they examined. Their experiments led to the conclusion that there must be present in Pitchblende an element many times more radio-active than Uranium—so far undiscovered by chemical analysis. They therefore examined Pitchblende and determined the radio-activity of the various precipitates. The acid group precipitate (containing Bismuth with Polonium) had considerable activity, but the alkaline earth group had the most.

To extract the radio-active element in larger quantity the Pitchblende was roasted with Sodium

Carbonate and lixiviated with warm water—the carbonates were then treated with dilute Sulphuric Acid—the Uranium passing into solution. The insoluble residue consisted of the sulphates of Calcium, Barium (with the Radium), lead, silica, &c. These were treated with Sodium Carbonate solution, and the Sodium Sulphate formed was removed by washing. Polonium and Actinium went into solution on treating the residue with dilute Hydrochloric Acid, whilst Radium, Barium, &c., remained behind. The residue was again boiled with Sodium Carbonate solution, converting the sulphates into carbonates. These were washed and treated with dilute Hydrochloric Acid. This solution contained Radium, Barium, Polonium and Actinium; the first two were precipitated by Sulphuric Acid. The sulphates formed were further purified and converted into chlorides, and by repeated fractional crystallisation, Radium Chloride (the least soluble) was obtained in pure condition. Giesel repeated the process, and found it more satisfactory to work with the bromides for fractionating at the conclusion of the process, eight crystallisations being sufficient to remove the more easily soluble Barium Bromide. He obtains about 0·25 Gm. of pure Radium Bromide from the ton of Pitchblende residues.

The atomic weight of the element was found, experimentally, to be 225 (taking Cl as 35·4 and Ag. 107·8). It should therefore be placed below Barium in the Mendelejeff series, and on the same line as Thorium and Uranium. This weight is possibly too low. The three radio-active elements, Uranium, Thorium, and Radium, have the highest atomic weights. The element Radium is divalent. Its spectrum was found to be a characteristic one, having resemblance to the alkaline earth metals. It gives a beautiful carmine flame reaction. It gives off heat, its temperature being always slightly higher than the surrounding atmosphere. It has been calculated that 1 Gm. in its existence evolves one thousand million heat units, sufficient if converted into work to raise 500 tons of matter a mile; whereas a Gm. of hydrogen, our best fuel, burned in oxygen will only yield 34,000 heat units, or one thirty-thousandth part of the output of Radium. It will melt its own weight of ice every hour. It has been stated that a cubic centimetre of Radium Bromide would generate, if properly insulated, sufficient heat to melt a glass vessel containing it. This heating is due to the enormous energy of the atoms spontaneously breaking up into the rays described below. (The element is assumed to contain normal atoms, and these in succession become the radio-active ones in minute proportion which are thus disintegrating.) A freshly-prepared Radium Salt has its energy stored up and reaches its highest power in three weeks or so, which it maintains apparently indefinitely. The element emits rays, minute particles of matter, a portion of which has a velocity of 100,000 miles per second. The cathode rays in a Crookes tube travel at about two-thirds of the velocity of light, which is 184,000 miles a second. A Barium-Platino-Cyanide screen is lit up by the rays through varying thicknesses of metal according to the concentration of the Radium and the amount with which the experiment is conducted. The early experimenters soon found that the rays will burn the skin if kept in close proximity for a length of time. In addition to the Barium Platino-Cyanide, such substances as glass, quartz, sugar, sulphur, quinine sulphate, camphor, glycerin, water, &c., become luminous under the same conditions. Magnesium platino-cyanide, which fluoresces well with "X" rays, does not respond so well to Radium. A tube of Radium wrapped in black paper lights up a diamond placed in proximity. Kunsite, an Aluminated Lithium ore found in California, is lit up with a red colour.

If the current from an induction coil be made to spark across two gaps parallel to each other, and Radium be brought near to one the spark will cease passing across the other; also the proximity of a tube of Radium will increase the spark enormously when there is only one gap. It is claimed that this property of ionising the air and rendering it more conductive, may at a future date be of very great value commercially.

The **chemical properties** of Radium are remarkable—as, for example, the fact that it converts corrosive sublimate into calomel. It decomposes water into hydrogen and oxygen (Giesel), oxygen is converted into ozone (Demarçay). It turns glass in its proximity to a violet colour, it also turns salt blue, and yellow phosphorus into the red variety. Mercury is converted into the yellow oxide, and carbon dioxide is produced if material containing carbon is present when the emanation (*vide* below) is stored in an atmosphere of oxygen (Ramsay and Soddy). The rays emitted by a highly active preparation discharge a charged gold leaf electroscope even through an inch or more of iron or zinc—5 milligrammes will do this at a distance of two yards. They destroy the vitality of seeds; mustard and cress seeds exposed for a week to their action refused to germinate. On the skin of a rabbit the rays are said to have produced a reaction followed by marked increase in the growth of hair.

Tests for Purity.

Good Radium Bromide should light up a Barium platino-cyanide screen through several copper coins. It should make Willemite fluoresce. The exact estimation of activity by rate of discharge of an electroscope (Rutherford's method) is a somewhat difficult matter, but good Radium Bromide will discharge an electroscope with ease, and these simple tests (which can be made at the time of purchase) are a safeguard for the investor.

Experiments on Bacteria with Radium.

Plate cultures of Bacteria have demonstrated the inhibitory effect of the rays through a mica screen on B. liquefaciens, B. coli communis, and B. prodigiosus. —L. i./03,1829.

Three Agar plate cultures were each inoculated with a drop of stale urine. Two of these cultures were placed under the action of a 5 milligramme tube of Radium Bromide inside and outside the petri dish respectively. After seven days' exposure the largest number of colonies was shown by the control, the next largest by the dish on which the Radium tube had been placed on the outside, and the least number was shown by the dish in which the Radium tube was placed inside; this last showed a very marked difference as against the first.

Experiments with the Typhoid Bacillus.

The following were placed in the incubator at 37° Centigrade:—

1. Agar culture with Radium tube outside the plate;
2. Agar culture with small quantity of Thorium Hydroxide in gutta-percha pad outside the plate;
3. and 4. Agar cultures with small quantities of Thorium Hydroxide inside;
5, Control,

These were examined occasionally during a fortnight. On all discrete colonies appeared, and the writer was unable to detect any particular difference in their form microscopically. The control, however, was undoubtedly more replete with colonies.

Experiments with the Diphtheria Bacillus gave similar results.

Radium rays are said to retard the development of most bacteria (L. i./03, 620), but appear to have no inhibitory action upon the growth of a culture of B. typhosus; on the contrary, there seems to be more activity in cultures which have been subjected to the rays than in those which had not been exposed. These experiences lead one to suppose that the beneficial action of Radium in certain cases is that of stimulation of the normal tissue rather than bactericidal.—L. ii./03,1688.

Further investigations on the effects on bacteria are necessary before generalisations can be made—the balance of opinion is in the direction of an inhibitory action—thus we read of an inhibitory action on B. typhi abdom. observed by German workers.—Medical Electrology and Radiology, V., 12.

The organisms of cholera, typhoid fever and anthrax are said to be killed by a three days' exposure to the rays from 25 milligrammes.—L. ii./03,1656; B.M.J.E. ii./03,31.

Radium rays are in reality of three kinds:—

The *α* rays, non-penetrating and slightly deviable in a strong magnetic field.

The *β* rays, more penetrating than the *α*, deviable.

The *γ* rays, exceedingly penetrating, non-deviable.

The *α* Rays.

A small piece of Radium placed in front of a certain "active" variety of Zinc Sulphide (Sidot's Hexagonal Blende) in the form of a screen under a microscope gives a remarkable scintillating appearance (as exhibited by Sir W. R. Crookes' Spinthariscope, from the Greek *σπινθαρίς*, a scintillation) as of minute flashes of light bombarding it. The fluorescent screen causes the *α* rays, which are positively charged particles travelling with a velocity of 20,000 miles a second, to be visible as they come in contact with it. This appearance is due perhaps to the rays cleaving the crystalline angular surface of the screen. In confirmation of this view it has been proved that the rays producing the phenomenon are very slightly deviable (Becquerel). This Zinc Sulphide is very markedly sensitive to the α rays and much less to the β. Barium platino-cyanide and Willemite, on the contrary, are more affected by the β than the α rays. The mass of these particles is about that of Hydrogen atoms and is enormous in comparison with that of the particles composing the β rays. This accounts for the feeble penetrative power of the former. In reality this energy is due to a continuous process of atomic change. According to Professor J. J. Thomson, Radium energy can proceed for at least 30,000 years. The α rays are absorbed by glass, and largely by mica, or a thin sheet of aluminium. They are more easily stopped the greater the thickness of matter opposed to them.

The rays apparently cause the decomposition of vegetable matter—*e.g.*, a piece of cambric placed above the radium.

The "law of density" governs the penetration of metals and other substances by these rays, the absorption being proportional to the density. Tin, however, is an exception both for the α and β rays; for the α it is about the same as aluminium, and for the β it is about three times as opaque as its density would indicate.

Polonium, another radio-active element, discovered by Mme. Curie, gives off the α rays almost exclusively. This body is claimed to lose half its radio-activity in nine months. Marckwald, who, in 1902 obtained it (under the name of Radio-Tellurium) by deposition on to a Bismuth plate from a solution of Pitchblende did not notice any deterioration. 2,000 kilos of Pitchblende yielded 4 milligrammes of Polonium. For experimental purposes Bismuth and Copper plates about 1¼ inch in diameter are supplied, having a coating of the element on the surface. By simply blowing over the surface of one of these discs, a charged electroscope placed a foot or two behind it may be discharged. These plates should be handled carefully, as the deposit is easily rubbed off with the finger. Indeed, a Spinthariscope may be prepared from one by rubbing the finger-nail over the surface with a piece of paper intervening. This removes a small quantity of the deposit. It is cut out and fixed above a Zinc Sulphide screen and is examined with a lens (Glew). The *a* rays emitted by this element have been made to stop a set of electric chimes.—P.J. i./04,183.

The *a* rays can easily be shown with the aid of an electroscope to be stopped even by a sheet of paper, and are therefore probably of little effect therapeutically.

The β Rays are deviable in an electric field. They are 100 times more penetrating than the *a* rays, being reduced to half value by passage through 0·05 cm. of aluminium. They correspond to the cathode rays in a Crookes tube, and have a velocity about two-thirds that of light, and consist of electro-negatively charged electrons about 1000 million million times smaller than an atom of hydrogen, and the + particles of the *a* rays.

In addition to the four radio-active substances already mentioned, a fifth, termed Actinium,* has been isolated in the ammonium hydrate group from Pitchblende. It gives off β rays. (A radio-active gas has been isolated from Cambridge, Ely, Birmingham, New Haven, U.S.A., and other waters, believed to be the Radium emanation. —Phil. Magazine, November, 1903. Bath water has also been shown to contain Radium in small quantity. The river Clitumnus, in Italy, has been suspected to contain it, in view of the fact that glass immersed in the stream soon acquires a violet colouration.)

These rays in all probability are responsible for the burning and destructive action of Radium on the skin, and are actually productive of the curative results. A burn produced may take as long as four months to heal.

The *a* and β rays "ionise" the gas through which they pass, making it capable of conducting electricity. Strutt has devised a simple apparatus for showing the dissipation of the negatively charged rays by Radium.

A small tube containing Radium is supported in an exhausted glass vessel by a quartz rod; to the lower end of the tube an electroscope is attached, and the surface of the tube is made conducting with phosphoric acid. The + charge left behind after the β rays are carried away is passed on to the leaves, which expand until they touch the sides of the vessel, connected to earth, which causes them to collapse, and the operation repeats itself again and again indefinitely. One of these pieces of apparatus in the writer's possession repeats every two minutes.—Phil. Mag., November, 1903.

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*Quite recently a sixth has been discovered by Giesel, also Berzilium and Carolinium by Baskerville from Thorium.

The γ Rays are of the nature of "X" rays; they are given off by Thorium and Uranium also, and are about 100 times more penetrating than the β, being cut down to half value by 6 to 7 cm. of glass or aluminium, and they will pass through 7 centimetres of lead before being reduced to 1 per cent. of their original strength. This being so, it will easily be understood that these rays are not stopped to any extent by clothing, rubber, glass, celluloid and a large number of metals. As a matter of fact, 99 per cent. of the total energy of Radium is due to the α rays, the β and γ being responsible for the remainder. Rutherford considers the γ rays are nearer in character to the cathode rays than to the "X" rays. The quantity of these rays from Radium must be so small that the therapeutic effects cannot well be ascribed to them.

In addition to these rays Radium gives off an **emanation** which is self-luminous and of a gaseous nature. It is given off without appreciable loss of weight of the original matter. It can be aspirated through a tube and be made to condense by freezing with liquid air. It has been found by Sir W. Ramsay and Mr. F. Soddy to give the helium spectrum on keeping; in fact, the emanation changes into helium, and possibly the α atom is an atom of this element. It is probable that helium is a common product in the disintegration of all the radio-active elements—the ultimate products of these elements have yet to be discovered. The emanation from the salt in the free condition (particularly on warming or *dissolving* the salt in water—in the cold dry salt it is in a stored up condition) causes a large number of substances, notably Willemite and diamond brought into proximity, to become radio-active. This is termed **induced activity**. Thorium emanation also induces or imparts activity, and the activity in the case of this element lasts longer. The imparted activity in both cases is thought to be actually due to a non-volatile type of matter into which the emanation has changed.

The fact that helium is occluded in various minerals is, according to Mr. Soddy, now accounted for by the disintegration of radio-active matter. This occurrence suggested to Sir W. Ramsay and him the investigation which led to the proof that Radium emanations consist in part of helium. The occluded gas is not found in non-radio-active minerals.

Helium, as its name implies, is present in the sun.

By these discoveries it is evident that the atomic theory, which has flourished for exactly 100 years — Dalton enunciated it in 1803 — will have to be modified, and in place of it we must come to look upon the ion as the unit of matter and the electron as the unit of force, matter and force to be considered as different manifestations of the same thing. The alchemist's dream only involves re-arrangement of the electrons; but, as pointed out by Sir William Ramsay, it is more probable that gold is changing into silver and copper than vice versa.

We have, that is, clearly before us the crumbling and decay of atoms. Must they not also be forming and coming to birth?—Sir Oliver Lodge.

Regarding the size of electrons, Sir William Crookes says: The sun's diameter is about 1½ million kilometres and that of the smallest planetoid is 24 kilometres. If an atom of hydrogen be magnified to the size of the sun, then an electron will be about two-thirds the diameter of the planetoid.

It has been calculated that 300 million atoms will lie in a row side by side in an inch, and a trillion will occupy the space of a granule of Lycopodium. 100,000 electrons can lie side by side in the diameter of the atom, as they are a thousand million million times smaller than the atom.

The emanation from Radium will cause a piece of Willemite—native Zinc Silicate—to be luminous even for weeks. Thorium and Actinium also give off a radio-active emanation. The activity of the emanation from Radium lasts several weeks, that of Thorium a few minutes, and that of the Actinium emanation even less time. Thorium and Actinium in addition to Radium, as already mentioned, have the power of "imparting activity" to substances near them.

The properties of the radio-active elements may be tabulated as follows:—

	RAYS.			Emanations.	Power of imparting Radio-activity to surrounding bodies.
	Non-penetrating.	More penetrating.	Exceedingly penetrating.		
Uranium ...	Yes	Yes	Yes	No	No
Thorium ...	Yes	Yes	Yes	Yes	Yes
Radium ...	Yes	Yes	Yes	Yes	Yes
Polonium ...	Yes	No	No	No	No
Actinium ...	?	Yes	?	Yes	Yes

Remarkable results have been achieved with Radium in **therapeutics.** Lupus, rodent ulcer, and epithelioma have been cured by juxtaposition. Dr. Mackenzie Davidson reports the following cases treated by placing 5 milligram tubes in contact with the part for various durations of time on successive occasions.

A rodent ulcer, about an inch square, on the nose, which had resisted Finsen and "X" ray treatment, was treated by about half-a-dozen applications of a 5 milligram tube with complete removal. No recurrence after nine months. This was the first case treated and cured in this country.

Tuberculosis verrucosa cutis on palm of the hand had been under treatment three years, two tubes applied for 20 to 30 minutes on seven occasions—cured.

Rodent cancer of nose. One and two tubes, eight applications about half hour each, cured.

Rodent ulcer or epithelioma. An almost hopeless case; the whole of right cheek destroyed and tongue laid bare. In this case as many as eleven tubes were applied at once, together with a thorium pad. A rash like erysipelas occurred but subsided; the serum, blood, &c., was, however, sterile. The patient can now speak, and cicatrisation is going on.

Malignant mole removed. Radium can be applied in throat and regions inaccessible to "X" ray or Finsen light. No use in Carcinoma.—B.M.J. i./04,181; L. i./04,1046.

Another case of rodent ulcer greatly benefited. It was found that iodoform was more rapidly decomposed by the rays in the presence of sodium chloride—hence the suggested use of bathing with common salt to assist action.—B.M.J. i./04, 182.

A tube of Radium Bromide brought near the closed eyelid in the dark will cause a sensation of light—the liquids in the eye being rendered luminous—this may prove of value therapeutically in ophthalmic practice.

A series of (mostly foreign) cases well treated by Radium, including lupus, psoriasis, melanosarcoma, carcinoma, mucosæ oris, epithelioma, is reported in Med. Electrology and Radiology, vol. v., 13.

It may be that the combination of rays emitted by Radium has some special advantage. The Radium rays are, from a scientific point of view, more satisfactory to work with than the "X" rays, as they are more uniform in character.—Electro-Therapeutic Sub-section B.M.A. Meeting, L. ii./03,463.

Effects on the nervous system (if prolonged and concentrated) are very pronounced, resulting in paralysis and death.—L. ii./03,1656. May prove of value in nerve diseases—in the treatment of neuralgia.

Radium preparations of low intensity applied to painful parts rapidly remove pain. Cures facial paralysis.—L. i./04,652.

Rodent ulcer cured by Radium after failure of "X" rays.—L. i./04,794.

Thorium Emanation for Inhalation.

Mr. F. Soddy suggests the employment of inhalations of Thorium emanation produced from Thorium nitrate solution by a wash-bottle inhaler, for lung diseases. It is assumed that these emanations will have a bactericidal action.

Two cases of incipient phthisis checked, and pleuritic friction disappeared by about 20 sittings of an hour each. 3½ ounces of the nitrate are carefully neutralised with ammonia in a 500 Cc. wash bottle, about ⅕ full of water, and the emanation is allowed to accumulate in the vessel before inhaling.—B.MJ. ii./03,197 ; i./04,654.

Applicators (MacLeod) for surface cases have been arranged in which the Radium tubes are tied, and the whole may then be bound with a bandage on to the part affected, *e.g.*, on an ulcer on the face—these can be washed after use in septic cases. An outer covering converts the tray into a box for carrying the tube in the pocket. Radium "buttons" are supplied for similar purposes, having a thin sheet of aluminium in front, through which the rays pass.

An applicator has also been arranged, suitable for throat and gynæcological, and another for nasal cases. They consist of a holder for the tube, attached to a pliable wire which can be "set" in any desired position.

Thorium Pads contain a convenient amount of Thorium Hydroxide enclosed in sheet rubber, and made to fit the part affected. The rays from this substance are used as a substitute for Radium.

In addition to the radio-activity of all these inanimate substances, it has been suggested by Blondlot and others that nerves and muscles of the human body possess an activity—

Blondlot's "N" rays are said to possess the power of increasing the phosphorescence (induced by Radium) of a Barium platino-cyanide screen. These rays are highly penetrating, and appear to be emitted by general sources of heat and light. Rays similar to these from the human frame affect a sensitive screen proportionally to the physiological activity of the part. It has been possible by this means to outline the nerves and the heart, the effects being proved not to be due to heat. The existence of these rays, however, lacks confirmation, and is indeed doubted. Plants are also said to emit these rays.—P.J. i./04,148.

L. i./03,106,620,909,1114,1468,1829; L. ii./03,1805. Therapeutics of.—B.M.J. ii./03,199. Physiological effects. — B.M.J. ii./03,1523,1524,1591; B.M.J.E. ii./03,91. Treatment of cancer.—B.M.J.ii./03,98,1667. Rays for phthisis.—B.M.J.ii./03,197,198. In Bath mineral waters.—L.i./04,109. Radio-activity of human body.--L.i./04,104. Revelations of Radium.--L.i./04,245. Action on animal tissues, eggs, &c.—B.M.J.i./04,382.

Comptes Rendus, 1902, vol. 132, p. 1289; Ber. der Deutschen Chem. Ges., vol. 33, p. 3569; Phys. Zeitschrift, 3rd year, No. 24, pp. 578-579; F. Soddy, The Electrician, Oct., 1903, to Feb., 1904; P.J. ii./01, 1,639, ii./02, 73,235, i./03, 472, 886, ii./03, 268,781; C.D. ii./03,143; B. & C. D. ii./03,254,260. One or possibly two new elements in a Ceylon mineral.—CD. i./04,635.

RANUNCULUS FICARIA.

Syn. PILEWORT OR CELANDINE.

This drug has been used in the form of ointment. It is prepared by digesting the fresh Pilewort with melted lard 24 hours, and straining after the manner of Savin Ointment. **Suppositories** are made containing 72 grains of the ointment and 18 grains of Spermaceti; also, more convenient, a **smaller size**, containing 45 grains of the ointment and 15 grains of Spermaceti; have been employed in hæmorrhoids and similar affections.—B.M.J.i./04,14; C. & D.i./04,55; Birmingham Med. Review, May, 1901.

RESORCINUM, P.G., U.S.

Dose.—3 to 8 grains (0·2 to 0·52 Gm.).

Metadihydroxybenzene is in white crystalline plates, larger than, but resembling, benzoic acid in appearance, melts at 230° F., and is easily volatilised. Soluble 1 in 1 of water, 2 in 1 of alcohol, and 1 in 20 of olive oil. It possesses powerful antiseptic properties. It coagulates albumen, and has a caustic action on the skin, but a 2 per cent. solution is not irritating to it. It is an effective topical remedy in diphtheria, and produces no injurious consequences. A 5 per cent. solution may be injected into the bladder without causing any irritation, and is useful in inflammatory affections of this organ, likewise in vesical catarrh after gonorrhœa; 5 to 10 per cent. solution is of service also in syphilitic sores and skin diseases; and a 1 per cent. solution improves unhealthy wounds, and is useful as an eye lotion in conjunctivitis. Given internally, but with great care, it has a specific action comparable to quinine, but it is apt to produce profuse perspiration, and its antipyretic action is short; it is best administered well diluted with water and flavoured with syrup of orange or glycerin. It is not compatible with Spirit of Nitrous Ether.

Tablets, 3 grains (0·2 Gm.). *Dose.*—1 to 3.

Glycerinum Resorcin, G.H.

Resorcin 1, Glycerin 3, Distilled Water 1.

Lotio Resorcini.

Resorcin 1, Ether 1, Castor Oil 1, Eau de Cologne 10, Alcohol (90 per cent.)–35. Useful for dandriff and alopecia.

Lotio Resorcin et Acidi Borici.

Resorcin 1, Compound Tincture of Lavender 10, Glycerin 10, Saturated Solution of Boric Acid 80, as a mouth wash after operations on the mouth.

Pasta Resorcini, Ihle's Paste, St. John's Hospital; Mid. H.

Resorcin 1, Zinc Oxide, Starch, Lanolin, Soft Paraffin, of each 12.

Pasta Resorcini Fortior (Lassar).

Resorcin 20, Zinc Oxide 20, Wheat Starch 20, Liquid Paraffin 40.

Pasta Resorcini Mitis (Lassar).

Resorcin 10, Zinc Oxide 25, Wheat Starch 25, Liquid Paraffin 40.

Pasta Resorcini et Zinci Oxidi, K.C.H.

Resorcin 1, Glycerin 1, Zinc Oxide 1, Paraffin Ointment (white) to 8.

Resorcin as an application in cancer.—L. ii./82,1033.

Whooping-cough has been treated by spray of resorcin every two hours; and a pigment to the larynx 1 per cent. solution.

It is useful as an application in diphtheria, also given internally in hectic fever with night sweats; under resorcin 2 grains and quinine 3 to 5-grain doses an improvement rapidly takes place. It is applied locally to condylomata and mucous patches.

Pigment of 10 per cent. relieves irritation of tubercle of larynx. For eczema, cold cream with 2 per cent. of resorcin is useful.

Cutaneous epithelioma treated successfully by 30 per cent. ointment with vaseline.—B.M.J. ii./90,96; Y.B. 1891,203.

Unusually good results from resorcin plaster in rodent ulcer.—B.M.J.E. i./91,102.

For acne rosacea, combined with zinc oxide.—Pr. 1.380.

In alopecia, Resorcin ointment, 1½ to 3 grains per ounce, is useful.

Euresol, Resorcin-monacetate.

A honey-like mass. It is available for all purposes to which resorcin is applied, and from its oily consistence is particularly useful, when dissolved 10 to 30 per cent. in acetone, for application to those parts of the skin covered with hair.—P.J. i./99,54.

Thio-resorcin. A Resorcin and Sulphur compound, is a yellowish powder only slightly soluble in alcohol; it has been recommended as a substitute for Iodoform. Five per cent. Ointment has been used for skin diseases.

RHAMNI FRANGULÆ CORTEX.

Frangula Bark (B.P. 1885).—*Syn.* BLACK ALDER; CORTEX FRANGULÆ.

This bark is imported principally from Holland in quills about half a line thick, with a warty, greyish brown exterior; contains the crystalline principle Emodin, this is also found in rhubarb root. The bark should not be employed until it has been kept at least one year (*P.G. Supp.*), else, it is stated, it produces sickness as well as purging. It possesses tonic, laxative properties, does not cause griping, and does not need the dose increased if habitually taken. It is especially useful in cases of hæmorrhoids.

Extractum Rhamni Frangulæ, B.P. 1885.

Dose.—15 to 60 grains (1 to 4 Gm.). Was a proof spirit extract.

Extractum Rhamni Frangulæ Liquidum, B.P. 1885.

Dose.—1 to 4 drachms (3·5 to 15 Cc.).

The bark was exhausted by boiling with successive quantities of water, the decoctions concentrated, and spirit added, so that one ounce = one ounce of bark.

Tinctura Rhamni Frangulæ.

Dose—1 to 2 drachms.

Frangula Bark 1, Alcohol 60 per cent. 10 parts.

RHUS TOXICODENDRON.

Poison Oak.—*Syn.* POISON IVY LEAVES.

Tinctura Rhois.

Dose.—2 to 5 or 15 minims (0·12 to 0·3 or 0·9 Cc.).

Imported from North America, prepared from fresh leaves 1, alcohol 2. A German formula is:—Expressed juice 5, alcohol 6. The emanations of the living plant produce an eczematous eruption of the skin. It has been used for rheumatism, in chronic cutaneous affections, paraplegia, and incontinence of urine from atony of the bladder. Also for hæmorrhoids.

RUBIDIUM.

The salts of this metal, on account of their higher molecular weight and greater electrolytic conductivity, have been thought to possess greater chemical activity than those of ammonium, potassium, and sodium, while resembling them in therapeutic action.

Rubidii Bromidum.

Dose.—5 to 30 grains (0·32 to 2 Gm.).

In white octahedral crystals, soluble 1 in 1 of water, with saline taste. Has been employed with good results in epilepsy. For cheapness,

Rubidium-Ammonium Bromide, in white granular crystals, is often employed. Its action is about equal to that of potassium bromide; more favourable in some cases. Average dose, 90 grains daily.

Efficient in epilepsy; more powerful than potassium bromide.—B.M.J. i./90,43.

Rubidii Iodidum.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

In colourless cubic crystals, soluble 1 in less than 1 of water; odourless, with bitter saline taste.

Recommended in polyarthritis and syphilis, often tolerated better than potassium iodide, being said to have less action on heart, and to be less irritating to stomach.—P.J. 1893,341; B.M.J.E. i./94,8; L. ii./94,42.

RUMICIN.

Syn.—RUMIN.

Dose.—1 to 4 grains (0·065 to 0·26 Gm.) in pill.

The dried extract of the root of *Rumex crispus*—yellow dock. Possesses astringent, tonic, and antiscorbutic properties, and is given in scrofulous skin diseases and as a depurative in congested liver and dyspepsia. Yellow dock root contains Chrysarobin.

Tinctura Rumicis. 1 in 10 of proof spirit.

Dose.—1 to 10 minims (0·06 to 0·6 Cc.).

Unguentum Rumicis is prepared from the fresh yellow dock root 1, with Benzoated Lard 2. Warmed together 2 hours and strained. Used instead of Chrysarobin for chronic skin diseases.

SACCHARIN.

Glusidum. *Syn.* GLUSIDE; GLUCUSIMIDE (*Off.*); BENZOYL-SULPHONIC-IMIDE. SACCHARIN.

Dose.—½ to 2 grains (0·032 to 0·13 Gm.) or more.

A derivative of toluene, obtained from coal tar, in white, intensely sweet, and minutely crystalline powder, rather light and flocculent. It is soluble 1 in 500 of water, in 90 per cent. alcohol 1 in 25, in proof spirit 1 in 80, in ether 1 in 100, incompletely in chloroform, and in glycerin about 1 in 50. It is but slightly soluble in oils and fats, — olive, or cod liver oil does not dissolve one-quarter per cent. of it. Its aqueous solution has an acid reaction; it forms crystalline sweet salts with alkaloids and metallic bases. Solutions of alkalis and their carbonates dissolve it, the latter evolving carbonic anhydride. This drug is largely used instead of sugar by diabetic patients and persons on special diets to reduce weight; large dose may disagree, and abdominal pain has been noticed from continued use.

Saccharin (about 2 grains of the soluble preparation, or 40 minims of the elixir, in an 8-ounce mixture) disguises the taste of nauseous drugs, such as salicin, sodium salicylate, cascara, nux vomica, and strychnine, and is used to flavour gluten and cocoanut biscuits for diabetic patients.

Saccharin is generally sold standardised to a sweetening power of 300 times that of sugar. It is also prepared refined to a standard of 450 and 500 parts of sugar.

Determination of saccharin in liquid foodstuffs.—Y.B.P. 1901,109.

Saccharinum Solubile, Soluble Saccharin, contains about 90 per cent. of Saccharin in combination with soda. In yellowish-white granular, micro-crystalline masses, easily soluble in water, and therefore convenient for flavouring purposes.

Dose.—½ to 2 grains (0·032 to 0·13 Gm.) or more.

Elixir Glusidi, B.P.C.—*Syn.* **Elixir of Saccharin.** Saccharin 24 grains, Sodium Bicarbonate 12 grains, Rectified Spirit 1 drachm, Distilled Water 7 drachms. Mix, dissolve, and filter. 20 minims contain 1 grain of Saccharin, sufficient to flavour a 4-ounce mixture.

Tablets of Saccharin. *Dose.*—1 or 2.

Contain ½ grain of Saccharin, combined with sodium bicarbonate.

Dulcin.—*Syn.* SUCROL; PARAPHENETOL CARBAMIDE.

In minute white crystals, soluble about 1 in 800 of water, 1 in 25 of alcohol. Possesses sweetening power about 200 times that of sugar; is said not to interfere with appetite or create dislike after prolonged use. Is soluble in and disguises flavour of castor oil.—P.J. 1893, 888,985,443; L. i./94,1203.

Lævulose, INVERTED SUGAR.—*Syn.* DIABETIN.

A whitish crystalline powder, freely soluble in water; reduces Fehling's solution and turns a ray of polarised light to the left. A stronger sweetening agent than cane sugar. Specially suitable for diabetic patients; is perfectly assimilated, none being found in urine.—P.J. 1893,888; ii./02,563.

It is also prepared of the consistence of honey, and as a syrup for microscopic work.

Saccharum Purificatum (*Off.*).—*Syn.* SUCROSE.

Cane Sugar may (in the absence of a polarimeter) be approximately estimated by heating 1 Gm. of the same in 50 Cc. of water, to which 10 drops of hydrochloric acid have been added, for half an hour on a water bath. The solution is then cooled and neutralised with soda and made up to 100 Cc. with water, and the Invert Sugar thus formed is estimated with Fehling's solution, 1 Cc. of which is approximately equivalent to 0·005 Gm. of Invert Sugar, the calculation being on the basis that 360 of Invert Sugar represent 342 of Cane Sugar.

Molasses, Queensland.

This is imported, and is sold as a "cure" for cancer. Consists of a dark brown syrup with aromatic taste.

SANGUINARIN.

Dose.—¼ to 1 grain (0·016 to 0·065 Gm.), in pill.

The powdered resinoid of a coffee-brown colour obtained from blood-root—*Sanguinaria canadensis.* In small doses, stimulant and tonic; in larger doses sedative, reducing the pulse, and increasing expectoration; in still larger doses, emetic.

It is emmenagogue and useful in functional amenorrhœa, also useful in dyspepsia and gastro-intestinal catarrh.

Tinctura Sanguinariæ, U.S.

Dose.—30 to 60 minims as an expectorant; 3 to 4 drachms as an emetic.

Sanguinaria root 7½, acetic acid 1, alcohol and water to 50 parts.

SANTONINUM (*Off.*).

Dose.—2 to 5 grains (0·13 to 0·32 Gm.) in sugar or milk.

A neutral crystalline principle obtained from Santonica, the dried flower-heads of *Artemisia maritima var. Stechmanniana* (*A. pauciflora*, Weber). Santonin is insoluble in water, soluble 1 in 40 alcohol 90 per cent. and oils (1 in 100 of castor oil), and chloroform 1 in 4. Also in caustic soda solution; exposed to sunlight it turns yellow. Poisonous properties have been ascribed to it, probably due to impurities. It is a useful anthelmintic for round and thread worms. It colours the urine orange, and in too large a dose may cause objects to appear of a green or yellow colour, or as seen through a yellow medium, obliterating the whole of the violet and the ulterior end of the blue bands in the spectrum.—*Nature*, 1889,408.

In addition to the glucoside santonin, **Artemisin** has been separated from the mother liquors.—Y.B.P. 1902,38.

As an anthelmintic is most active administered in an oily solution, *e.g.*,

Haustus Santonini et Olei Ricini.

Santonin in powder ...	4 grains.
Castor Oil	3 drachms.
Mix and emulsify with	
Mucilage of Acacia ...	4 drachms.
Syrup	1 drachm.
Peppermint Water to ...	1½ ounces.

Taken fasting in the morning makes a dose for a child of 6 to 12 years.

When this is inadmissible the santonin may be combined in a tasteless form with jalapin.

Tablets, 1, 2 and 3 grains. *Dose.*—As Santonin.

Pulvis Santonini Compositus, Gt. Orm. H.

Santonin 2½ grains, Compound Scammony Powder 2 grains, Calomel ½ grain. For a child 1 year old.

V. C. H. has Santonin 1 grain, Compound Scammony Powder 2 grains.

Trochisci Santonini (*Off.*).

These lozenges contain 1 grain (0·065 Gm.) in each, with Simple Basis; one every night for a few nights should then be followed by an early morning aperient.

Suppositorium Santonini.

Contains 3 grains (0·2 Gm.), or more if ordered. Should be administered every 2nd or 3rd night, for 3 times. Is an efficient anthelmintic, especially for thread worms, which often infest the anus of children, causing them to have disturbed sleep.

Inoperative against tape worm; 2 to 4 grains according to age, with one or more teaspoonfuls of castor oil early in the morning, repeated two or three mornings, seldom fails for thread worms.—R.

Three grains in child of 3½ years caused vomiting, green perception of all colours, and incontinence of urine, which was of an intense saffron colour.—B.M.J. i./91,1224; Pr. xlvii. 129.

Relieves the lightning pains of tabes dorsalis.—Pr. lxx. 286.

Effect on sight and hearing.—B.M.J. ii./91,726.

Ascarides, producing anæmia, expelled by santonin; small doses recommended.—B.M.J.E. i./92,52.

Santoninoxim.

A derivative of santonin produced by the action of hydroxylamine in an alkaline solution. Is less absorbable, and non-toxic, but equally active when administered in double or triple doses.—P.J. 1889,1049; Th. Gaz. 1890,573. On account of insolubility is preferable to santonin.—L. ii./92,1156.

It kills the worm, whereas santonin only paralyses it; both require to be followed by a purgative.—L. i./91,561.

SAPONES.

Sapo Animalis, Curd Soap; **Sapo Durus,** Castile Soap; and **Sapo Mollis,** Soft Soap, are Official. The last is also called Sapo Viridis and Sapo Kalinus, P.G. iv., and is prepared with Potash and Olive Oil in B.P.; but with Linseed Oil in P.G., it has a brownish green colour, and is a useful detergent for skin affections.

The melting points of the fatty acids extracted distinguish these soaps with ease—45° to 50° C. is that of the acid (chiefly stearic) separated from the Curd Soap, and 25° C. is the average melting point of acids obtained from a soap, *e.g.* Sapo Durus, made with Olive Oil.—Ph.

Spiritus Saponis Alkalinus (Hebra). Mid. H. has Sapo Mollis 4, Alcohol 90 per cent., 2.

Spiritus Saponis Kalinus (SPIRITUS SAPONATUS, P.G.).

Is prepared by saponifying Olive Oil 6, with Liquor Potassæ 7, and Alcohol 7½ in a stoppered vessel by frequent agitation. A small quantity of this product should mix clear with Alcohol and water. Add then Alcohol 22½ and water 17; filter.

'**Soap and Spirit Lotions**' are frequently ordered to be made by dissolving Soft Soap 1 in Alcohol 90 per cent. 2.

Ether Soap.

Dissolve Soft Soap 32 in Alcohol 90 per cent. 20, allow them to stand 24 hours and decant carefully from any sediment, then add Methylated Ether Sp.G. ·720, 52 parts. Is largely used as a surgical detergent prior to operation.

Ether Soap with Mercuric Iodide, contains 1 in 1,000.

Sodii Oleas.—*Syn.* EUNATROL.

This is prepared in 2 and 4 grain Pills and is given to dissolve gallstones.

Liquid Glycerin Soap.

A yellowish liquid containing 40 per cent. of Glycerin is a bland and soothing toilet preparation for delicate skins. It is a constituent of **Kalodont** and **Salicifrice,** and other tooth pastes.

SENNA (*Off.*).

The dried leaflets of either *Cassia acutifolia* (Alexandrian) or *Cassia angustifolia* (East Indian or Tinnevelly).

The activity of the drug is due to Cathartic Acid. Other constituents are Emodin, Chrysophanic Acid and Gluco-sennin.

In addition, the legumes or fruits of both these varieties are in use for making infusions.

Elixir Sennæ Leguminorum may be prepared as Elixir Sennæ, B.P.C., using the legumes instead of the leaves.

Tinctura Sennæ Composita (*Off.*).

Dose.—½ to 1 drachm repeated; 2 to 4 drachms for a single dose.

Senna 1, in Alcohol 45 per cent. 5, with Carminatives.

Tinctura Sennæ Leguminorum. The same strength as above but using the legumes in place of the leaves.

Confectio Sennæ (*Off.*). — *Syn.* LENITIVE ELECTUARY.

Dose.—60 to 120 grains (4 to 8 Gm.).

Pulvis Glycyrrhizæ Composita contains 1 in 6.

Elixir Sennæ, B.P.C.

Dose.—1 to 3 drachms (3·5 to 10·5 Cc.).

Moisten Alexandrian senna 16 ounces, with 4 ounces of rectified spirit mixed with 12 ounces of water, pack tightly in a closed vessel, macerate for 3 days, and press. Repeat with sufficient of the same menstruum to give, in all, 16 ounces of liquor. Add this to sugar 12 ounces, and heat in a closed vessel to 200° F. After ten minutes, cool, strain, and add, previously mixed, Chloroform 24 minims, Oil of Coriander 2½ minims, Tincture of Capsicum ½ drachm, Rectified Spirit 3 drachms, adding proof spirit, if necessary, *q.s.* to 24 ounces.

In this preparation the **Cathartic Acid**, a glucoside contained in senna, not being subjected to long exposure to heat, is preserved from oxidation; if isolated, it is sometimes prescribed in doses of 4 to 8 grains in pills but it is very unstable.

Mistura Sennæ Composita.—*Syn.* BLACK DRAUGHT (*Off.*).

Dose.—1 to 2 ounces (30 to 60 Cc.).

Magnesium Sulphate 5, Liquid Extract of Liquorice 1, Compound Tincture of Cardamoms 2, Aromatic Spirit of Ammonia 1, Infusion of Senna, *q.s.* to 20.

Syrupus Sennæ (*Off.*).

Dose.—½ to 2 drachms (1·8 to 7 Cc.).

Is prepared by three macerations with 20 per cent.

alcohol, concentrating the product, and heating to 180° F. for a few minutes, then filtering and adding Sugar and Oil of Coriander.

Syrupus Sennæ cum Manna. P. Aus. Add. *Dose for Infants.*—½ to 1 drachm (1·8 to 35 Cc.).

Tinnevelly Senna, cut, 35, Bruised Star Anise 2, macerate 12 hours in cold Water 350; in strained liquor 250, dissolve Sugar 400, Manna 50. Boil to a Syrup.

Extractum Sennæ Leguminorum Liquidum, B.P.C. *Dose.*—1 to 2 drachms.

Senna Pods 16 ounces, bruised, are repeatedly macerated with a mixture of Alcohol 90 per cent. 6 ounces, and Water 12 ounces, pressing after each maceration, to produce 16 ounces.

Garfield Tea. An American specialty, contains Senna.

SINAPIS.

Mustard.

The dried ripe seeds of *Brassica nigra* (*Semen Sinapis*, P.G. iv.) and *B. alba* (*Semen Erucæ*, P.G. iv.), powdered and mixed. The condiment sold as mustard consists of this mixture from which most of the oil has been expressed, and the cortical portion of the black seed has been removed. In cases of poisoning a tablespoonful in water is a convenient emetic. Black mustard contains the glucoside Sinigrin, with Myrosin which is similar to the ferment Emulsin in Bitter Almonds. This glucoside splits up under the influence of water with evolution of Allyl-iso-sulpho-cyanide, the principal constituent of the Essential Oil (*v. infra*). The white seeds contain a glucoside termed Sinalbin, which also splits up under the influence of water and Myrosin with evolution of an Oil, which, however, cannot be distilled with water. As the black seeds contain an excess of their glucoside and the white an excess of the ferment, the combination of the two produces the strongest effect.

Charta Sinapis (*Off.*).

Black and white mustard seeds in equal quantities are bruised and exhausted of fixed oil by means of benzol, the residue dried and powdered, and of this 5 parts are mixed with 18 volumes of **Liquor Caoutchouc** (*Off.*)* (Caoutchouc or Indiarubber 1, Benzol 10, Carbon Bisulphide 10), spread on cartridge-paper and dried by exposure. In preparing this paper, the oil being removed, renders the glucoside capable of being more readily attacked by the ferment.

Linimentum Sinapis.

Camphor 3, Alcohol (90 per cent.) 43, dissolve and add Volatile Oil of Mustard 2, Castor Oil 7.

Oleum Sinapis Expressum. Is used as a rubefacient.

Oleum Sinapis Volatile (*Off.*).

The oil distilled from black mustard seeds after maceration with water consists principally of Allyl isosulpho-cyanide.

Spiritus Sinapis, P.G. iv.

Oil (volatile) 1, Alcohol (90 per cent.) 49.

Thiosinamin.—*Syn.* RHODALLIN, ALLYL-THIO-UREA, ALLYL-SULPHO-CARBAMIDE.

Formed by warming oil of mustard with alcoholic solution of ammonia. Soluble in water, alcohol, and ether. Solution, 10 to 15 per cent. in dilute glycerin; this is used hypodermically for lupus and uterine affections. Preferred to alcoholic solutions which cause pain. Its application by subcutaneous injection softens scar tissue when a 10 per cent. solution is used; strictures of the gullet have been much relieved by this treatment.—B.M.J.E. ii./01,51; i./02,91.

Has also been given internally in dose of ½ grain (0·03 Gm.), increased to 1½ grain (0·1 Gm.) in alcoholic solution (Merck). Should be used with caution.—P.J. 1892,342; L. i./93,1083; B.M.J.E. i./93,47. For keloid —L. i./97,1106; Y.B. 1898, 363,467.

SODIUM.

By experiments on the ventricle of the frog's heart it has been proved that, whilst Potassium Salts are very poisonous, Sodium Salts can scarcely be made to kill. By Potassium Salts excitability and contractility are both powerfully affected; by Ammonium Salts excitability practically unaffected, contractility powerfully affected; a wide gap separates Sodium Salts from the last, by these excitability is slightly affected, but contractility suffers chiefly; Potassium Salts, by these experiments, are 14 or 15 times as poisonous as Sodium Salts. The therapeutic importance of these results is obvious. Bromide, iodide, and chlorate of potassium are largely given as medicines; the above would suggest the use of the Sodium Salts in preference. Clinical evidence tends to prove the same by their action on the entire organism, as may be judged by the favour shown of late to the latter salts, especially to Sodium Bromide.

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* In making this liquor it saves time to treat the rubber with the carbon disulphide alone for an hour or two to form a jelly, then the benzol may be added and the preparation be ready in 24 hours.—C. & D. 54, 29.

Analysis of the urine and fæces in fatal cases of Bright's disease, ascites and acute fevers show that the sodium administered in the food is completely retained—there being some evident need of it in the system in these cases—in the case of an ascitic effusion containing 0·3 per cent. of sodium chloride this was accounted for. Had nothing to do with uræmic poisoning.—B.M.J. i./03,548.

Sodium Chloride produces œdema in cases of nephritis, while during a milk diet (without Sodium Chloride) the œdema disappears.—L. ii./03,61.

Artificial or Inorganic Serum of Trunecek for nervous ailments and high arterial tension.—B.M.J. ii./02,149. *Dose.*—Subcutaneously 1 Cc. to commence with, increasing by 0·2 Cc. May also be given by rectum and mouth.

Sodium Sulphate 14, Sodium Chloride 4·9, Sodium Phosphate 15, Sodium Carbonate 21, Potassium Sulphate 40, water to 100.

See also Treatment.—1902,267,417.

Saline Solution, Normal. PHYSIOLOGICAL SALT SOLUTION. This is intended to be isatonic with the blood corpuscles and possesses the same osmotic pressure as the liquid of the liquor sanguinis.

A solution of sodium chloride (0·75 per cent. Surgeons differ as to the proportion of sodium chloride, some say 0·6 or even 0·9 per cent.), or roughly 60 grains to the pint of boiled water is generally used for intravenous injection in hæmorrhage, uterine flooding, or collapse.

The solution should be at a temperature of about 105° F., and injected into any convenient vein, at the rate of about a pint in ten minutes, or into the rectum; particularly useful in the intestinal hæmorrhage of typhoid.

Hayem's Solution. Sodium Chloride 5, Sodium Sulphate 10, Water 1,000. Sterilise. **Chéron's Solution.** Sodium Chloride 2, Sodium Sulphate 8, Sodium Phosphate 4, Phenol 1. Sterile Water 100. *Dose* intravenously 5 to 10 Cc. **Iodized Serum, De Renzi.** Sodium Chloride 6, Iodine 1, Potassium Iodide 3, Sterile Water 1,000. *Dose* in surgical tuberculosis 200 to 300 Cc. per diem.—Y.B.P./02,251.

This must be distinguished from Hayem's Blood Examination fluid, *vide p.* 599.

Carbolic acid poisoning, recovery under injections of saline solution.—L. ii./98,1326.

Shock from injuries much relieved.—L. ii./98,1390.

Post-partum hæmorrhage, successful use.—L. ii./98, 1628. Sciatica relieved by.—L. i./01,1032.

Many gratifying results in relief of effects of hæmorrhage.—L. ii./99,1825. After hæmatemesis.—B.M.J. i./02,770.

In uræmia and puerperal eclampsia.—L. i./01,720; B.M.J. i./01,510.

For gastric ulcer, given by enemata.—L. i./01,818.

Successful use of injections for morphine poisoning. —L. i./02,1317.

Puerperal eclampsia relieved by injections. — L. i./01,1682.

Alcoholic poison by 2 ounces of whisky in a child of 4 years. Rectal injection. Recovery.—B.M.J. i./03, 1142.

Relapsing fever and a case of severe osteomyelitis well treated by injections. The sedative effect of duboisine, hyoscine, and bromides is increased by administration in 400 Cc. of normal saline.—M. A. 1904,21.

Normal saline during and after abdominal section combats shock and lessens thirst.—M.A. 1904,96.

Solubes' Sodium Chloride, 15 grains each, are useful for producing extemporaneously 5 ounces of a normal saline solution for surgical use.

Tubes of Saline Solution, Sterilised, contain in saturated solution sufficient for two pints, hermetically sealed. Best for post-partum hæmorrhage; are convenient for carrying in the surgical bag.—L. i./99,35; ii./00,1866.

Cerebos Salt. This contains Sodium Chloride with 4 per cent. of mixed phosphates, in which Calcium Phosphate predominates, which renders it less deliquescent and is also a useful addition therapeutically—it is intended to replace the phosphates removed in the preparation of food, that is, in the bran of wheat, the bones of animals, and in the soluble phosphates washed out in boiling vegetables.

Digestive Salt.—*Syn.* PEPSALIA.

This consists of Sodium Chloride and Pepsin.

Pulvis Sodii Chloridi Compositus.

Potassium Chlorate 1, Alum 1, Boric Acid Powder 1, Sodium Chloride 6, Sodium Biborate 6.

A 'saltspoonful' in a half a tumbler or more of warm water as a gargle is very beneficial for inflamed conditions of the throat.

Sodii Bromidum. Sodium Bromide (*Off.*).

Dose.—5 to 30 grains (0·32 to 2 Gm.).

Tablets, 5 grains (0·32 Gm.). *Dose.*—1 to 6.

In slightly deliquescent granular white crystals, tasting like common salt; soluble 8 in 9 of water. The anhydrous salt only should be used medicinally, it can be crystallized containing 26 per cent. of water. If therapeutically as active as potassium bromide, Sodium Bromide is preferable, from its weaker action on the heart.

A mixture of bromides in the proportion of potassium bromide 2, sodium bromide 2, and ammonium bromide 1, is said to have a better action than either salt alone.

A course of sodium bromide the best means of overcoming morphine habit. Initial dose 30, increased to 100 or 120 grains at intervals of 12 hours. Effects noticed about sixth day, when morphine, which has been gradually lessened each day, should be discontinued.—Th. Gaz. 1890,599.

Maniacal attacks warded off by drachm doses combined with hyoscine injections.—B.M.J. i./03,74.

Sal Bromatum Effervescens, *Arzn.*

Dose.—60 to 120 grains (4 to 8 Gm.).

Potassium Bromide 400, Sodium Bromide 400, Ammonium Bromide 200, Sodium Bicarbonate 1000, Citric Acid 380, Tartaric Acid 445, Sugar 175, all in powder, separately dried and sifted. Mix in above order, and moisten with Absolute Alcohol 300; sift the mass quickly through a coarse sieve and dry at about 104° F.

Elepizone. *Dose.*—1 drachm 4 times a day.

A specialty, said to contain sodium bromide, ammonium bromide, potassium bromide, tincture of nux vomica with caramel *q.s.* to 1 ounce of winter-green water. Mistletoe is said to be a constituent.

Sodii Bicarbonas (*Off.*).

Dose.—5 to 30 grains (0·32 to 2·0 Gm.).

Occurs in small white crystals soluble 1 in 11 of water; 20 parts are neutralised by 17 of Citric or 18 of Tartaric Acid.

A little rubbed on to the gum or placed in the cavity of a tooth, stops toothache.

Large doses very useful in infantile vomiting; to neutralise the acid intoxication in these cases 100 grains should be given when attack threatens.—M. A. 1904,379.

Nebula Alkalina, T.H. Sodium Bicarbonate 15 gr., Borax 15 gr., Carbolic Acid 4 gr., Glycerin 45 m., water 1 ounce. *Vide* also Dobell's Solution.

C.L.T.E. has approximately half this strength *sine* Glycerin.

Nebula Sodii Bicarbonatis, C.L.T.E. Sodium Bicarbonate 20 gr., Glycerin 1 dr., water to 1 ounce.

Sodii Carbonas (*Off.*).

Dose.—5 to 30 grains (0·32 to 2·0 Gm.).

Is prepared from Sodium Chloride either by (the Solvay or Ammonia process) interaction with Ammonium Bicarbonate and subsequent ignition (Sodium Bicarbonate is an intermediate product), or by converting it into Sodium Sulphate and the action of heat on a mixture of the sulphate with Carbon and Calcium Carbonate (Leblanc process).

Sodium Carbonate is soluble in less than 2 of water. It effloresces in the air.

Instruments are boiled in a solution 1 per cent. strength to prevent rusting and for sterilising.

Sodii Chloras, Sodium Chlorate.

Dose.—10 to 30 grains (0·65 to 2 Gm.).

In large regular modified tetrahedric crystals, colourless, and has a mawkish, not disagreeable, saline taste, soluble 1 in less than 2 parts of water, and 1 in 34 of 90 per cent. alcohol. It fuses and deflagrates when exposed to a red heat. For many purposes for which potassium chlorate is used, this salt is to be preferred. For stomatitis, with ulceration along the edges of the gums, it is as useful as potassium chlorate.

Tablets of Sodium Chlorate and Borax, 5 grains. Useful in loss of voice and congested conditions of the throat.

Trochisci Sodii Chloratis, 3 grains in each (0·2 Gm.). Are prepared in two forms, with black currant paste and with plain sugar. They are much more palatabl than potassium chlorate lozenges, and are quite a beneficial as these in affections of the mouth and throat

Gargarisma Chlori, Chlorine Gargle.

Sodium Chlorate in powder	10 grains.
Hydrochloric Acid	30 minims.

Mix in a pint bottle, and let the gas generate and replac the air in the bottle, then cork the bottle, and let it stan for two minutes; lastly add gradually, shaking afte each addition,

Distilled Water to... ... ... 1 pint.

Useful as a detergent, and to remove follicular patche 2 or 3 ounces in a quart jug may be used as an inhala tion (cold). Potassium chlorate may be used in plac of the sodium salt, but the latter is less nauseous.

Is recommended in diphtheria, to be used freel as gargle and small quantities swallowed.—B.M. i./93,1004; L. i./95,445.

Gargarisma Chlori, St. Th. Has Potassiu Chlorate 200 grains, Hydrochloric Acid 40 minims, ar Water 1 pint, and is used diluted with an equal quanti of water, or more.

Gargarisma Potassii Chloratis, St. Th. H Potassium Chlorate 200 grains, Hydrochloric Acid 1 minims, and Water 1 pint.

Sodium Hypochlorite is an efficient bactericide.—L. ii./96,1509.

Sodii Citras, Sodium Citrate. *Dose.*—10 to 60 grains (0·65 to 4 Gm.).

Is in small granular crystals, resembling common salt; it is given as a cooling saline, in preference to potassium citrate.

Useful in azoturia, for it diminishes both polyuria and the losses of urea, and recommended for diabetes.—M. 01,131.

Liquor Sodii Ethylatis (*Off.*).

Is prepared by dissolving sodium 1, in absolute alcohol 20, keeping the latter cool by a stream of cold water; has Sp. Gr. 0·867.

The solution is syrupy, colourless, but darkens to a brown colour, and is recommended as the most manageable and effective of all caustics. It is used to destroy nævi and other vascular growths. It should be lightly, but effectually applied to the part by means of a pointed glass rod for 2 or 3 successive days, when a scale or scab will form, which should be left until it is loose, and the treatment continued again. It is said to cause little or no pain. No water should be allowed to touch the part under treatment.

Glass Capsules are prepared containing 20 minims of the liquor. These are convenient in use, and the liquor is not so prone to decomposition.

Many cases of lupus have been completely cured by this application.

Successful use in hypertrichosis, also in removing moles.

Pasta Londinensis, London Paste, T.H.

Caustic Soda and Unslaked Lime of each equal parts, rubbed together in a warm mortar—made into paste when required for use as a caustic. It is said to be less painful than **Vienna Paste,** which is Caustic Potash 5, Slaked Lime 6 (**Pasta Potassæ cum Calce, Mid. H.** has equal parts), made into a Paste with alcohol.

Sodium Hypobromite, Solution of.

Caustic Soda	100 Gm.
Distilled Water	250 Cc.

Dissolve, cool, and keep iced while adding *guttatim.*

Bromine	25 Cc.

Mix and dissolve. This solution is used to estimate the amount of urea in a given quantity of urine. On adding the solution, nitrogen is evolved from the urea, and is measured in a suitable apparatus, in which each graduation represents 1 per cent. of urea in the urine.

It is better to keep the bromine separate, it is therefore supplied in tubes containing 1, 2·2, and 4 Cc. respectively; 1 Cc. of bromine should be added to 11 Cc. of the solution as required. In place of these **Liquor Bromi**—Bromine 1 Cc., Potassium Bromide 1·5 Gm., Distilled Water *q.s.* to 11 Cc. (=1 in 11) may be used in equal quantity to the soda solution.

☞ *Vide* also Urea Estimation, *p.* 608.

Sodii Iodidum (*Off.*).

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

A dry, white crystalline deliquescent powder, soluble 3 in 2 of water and 1 in 3 of alcohol 90 per cent. Is required officially to be nearly 99 per cent. pure, and must be distinguished from the hydrous salt containing 2 H_2O, which crystallises from cold solutions.

Sodii Nitris, Sodium Nitrite (*Off.*).

Dose.—1 to 2 grains (0·065 to 0·13 Gm.).

Is obtained by reduction of Sodium Nitrate by fusing it with lead in small pieces.

In white, deliquescent, crystalline granules, or in sticks, with a cooling saline taste, soluble 2 in 3 of water; useful in angina pectoris and in epileptiform convulsions. In these has an action similar to nitrite of amyl.—Pr. xxviii,420; Pr. xxx.179,321.

Compressed Tablets, 2½ grains each, are prepared.

For asthma 3 to 5 grains frequently repeated; specially useful with hyoscyamus.—L. i./90,240.

Can well replace the less stable nitrites, most useful in angina and irregular heart action; bronchitis and asthma are not benefited.—Pr. lii.357.

Even ⅛ grain distinctly affects the circulation, yet large doses do not cause death.—D. J. Leech.

Sodii Phosphas Neutralis. *Syn.* TRIBASIC SODIUM PHOSPHATE (+$12H_2O$).

Large quantities of this salt are used for softening water and for boilers, preventing the incrustations.

This salt dissolves in water with marked alkaline reaction, probably produced by dissociation of Sodium Hydrate.

Sodii Phosphas (*Off.*). *Syn.* HYDRIC-DI-SODIC PHOSPHATE; TASTELESS PURGING SALT.

Dose.—¼ to ½ ounce (7 to 15 Gm.) or 30 to 120 grains (2 to 8 Gm.) repeated, may be given in soup.

Soluble 1 in 6 of water, is very efflorescent, loses 63 per cent. of its weight when heated to dull redness. Has an alkaline reaction.

In a diabetic, sodium phosphate *per os* and injected, reduced the amount of urine and glucose.—B.M.J. i./03,1205.

Sodii Phosphas Effervescens.

Dose.—1 to 3 drachms (4 to 12 Gm.).

This forms a convenient and pleasant mode of taking his useful purgative. Introduced by W. M., and was made official.

Sodii Phosphas Effervescens (*Off.*). Is similar.

Vescettes' of Sodium Phosphate.

Each containing 30 grains. To be crushed and aken in a draught of warm water.

Sodii Phosphas Exsiccatus.

Dose.—10 grains to 4 drachms (0·65 to 16 Gm.) n some warm liquid.

Sodium phosphate is mildly aperient, well suited for a elicate stomach; in small doses it is antacid and diuretic, seful in bilious sick-headache and jaundice.

For hepatic calculi, 60 grains 3 times a day, recommended with $\frac{1}{20}$ grain sodium arsenate added, if any vidences of gastric intestinal catarrh are present.

Subcutaneous injection (of 2 grains) recommended in ervous affections.—B.M.J.E. ii./92,80. Cure of locomotor ataxy.—L. ii./93,1246; doubts thrown upon the ase, 1422, 1550. Another case.—L. ii./93,1352.

Sodii et Ammonii Phosphas. *Syn.* MICROCOSMIC SALT. This is used in chemical analysis with the blowpipe.

Sodii Phosphas Acida. Dihydrogen Sodium Phosphate.

Dose.—30 to 60 grains (2 to 4 Gm.).

Crystals soluble about 1 in 1 of water, and 1 in 300 f alcohol 90 per cent. Has been given in alkalinity f urine with good results. Particularly useful in ystitis, and after operations on the bladder to keep the rine acid. If diarrhœa occurs, the administration should be stopped for a short time. The patient may also receive a solution of 2 drachms of the salt to a pint of water, and be directed to drink the same from time to time.—L. i./03,662; B.M.J i./03,1256.

Sodium Silicate, Solution of.

Syn. SOLUBLE GLASS, Water Glass.

A viscid solution, of the consistence of treacle, usually containing 10 per cent. of caustic soda and 20 per cent. of silica. Sodium Silicate solution has a remarkable power in arresting the putrefaction of organic matter. The corresponding potassium preparation has been used in erysipelas, diluted with from 4 to 11 parts of water. The latter, care being taken that it was neutral, has been employed to paint over the affected part with success.

Potassium Silicate, Solution of.

Syn. SOLUBLE GLASS, Water Glass.

Is less viscid than the last. Both preparations have been employed to impregnate bandages for treating fractures and other surgical cases, in place of starch; but the potassium solution, if nearly neutral, is preferred.

Salufer. A mixture of Silicofluorides used in the moist treatment of wounds. It has the advantage of there being no fear of absorption attending its use.—B.M.J.i./03,712.

Sodii Persulphas, Sodium Persulphate.

Dose.—1 to 3 grains in water before meals.

In small white granular crystals, soluble in water. Recommended in France for tuberculosis because it stimulates the appetite. Similarly for chlorotic and neuropathic subjects. Useful in hyper-acid dyspepsia at the onset also in gastric cancer. This in common with the other persulphates is a strong oxidising agent.

Ammonium and Potassium Persulphates (the latter known as **Anthion**), are used in Photography.

The Ammonium Salt is stable at 100° C. but in the moist condition, readily yields ozonized oxygen, liberates iodine from potassium iodide, converts uric acid into guanine, &c., oxidizes hæmatine in ammoniacal solution

Lithium Persulphate. *Dose* 1 to 3 grains. I suggested for use in gout and rheumatism.

Quantitative estimation of persulphates by means o Potassium Iodide.—Y.B.P., 1901, 97.

Sodii Sulphas Acidus. *Syn.* Sodium Bisulphate.

In crystals or in fused masses, is recommended to purify water which may have typhoid contamination; 15 grains to a pint of water destroys *B. typhosus* after 15 minutes contact.

Tablets, 5 grains (0·32 Gm.), for disinfection of water; have been used in the South African and in the Russo-Japanese wars.

Sodii Sulphas Exsiccatus. Natrium Sulphuricum Siccum, P.G. iv.

Dose.—½ to 2 drachms (2 to 8 Gm.).

On drying sodium sulphate (Glauber's salt) it loses about one-half its weight (the water of crystallization), leaving the anhydrous salt—a preparation which is much more convenient for use in dispensing, especially in powders. Epsom salts, although a more active aperient than Glauber's salt, do not stimulate the liver like the latter, and are not nearly so agreeable to take.

Sulphate of sodium exhibits no poisonous action when injected into the circulation, but sulphate of magnesium when so injected acts as a powerful toxic agent, paralysing first the respiration and afterwards the heart. Neither purges when injected into the blood or subcutaneously.—B.M.J. i./85,1161.

Glauber's salt is most pleasant to take, in the form of

Sodii Sulphas Effervescens.

Dose.—A teaspoonful or more in half a tumbler of water, taken half an hour before breakfast; it produces as a rule *one* efficient evacuation.

An agreeable and palatable aperient introduced by W. M., containing about half its weight of dried sodium sulphate; stimulates both the liver and bowel without causing depression. Its action resembles that of Carlsbad Water. It is suitable for travellers, portable, non-deliquescent, stable, and keeps well in the tropics.

Sodii Sulphas Effervescens (*Off.*). Is similar.

Sodio-Magnesii Sulphas Effervescens.

Dose.—A teaspoonful or more in half a tumbler of water, taken half an hour before breakfast.

An agreeable and efficient aperient introduced by the writer. The Sulphates of Sodium and Magnesium combined resemble Hunyadi Janos and Pullna waters; also Friedrichshall, if a little common salt be added to each dose. This preparation is palatable, stable in composition, and convenient to use when travelling.

'**Vescettes**' of **Sodio-Magnesium Sulphate.** Each equivalent to 60 grains of the above, to be crushed and dissolved in a small draught of warm water.

Sodio-Magnesii Sulphas Effervescens cum Caffeina.

Dose.—One teaspoonful or more.

This is a useful combination as a pick-me-up, and for headaches.

'**Vescettes**' are equivalent each to 60 grains of this preparation.

Chloro-Sodio-Magnesian Aperient.

Dose.—A teaspoonful or more.

An efficient saline purge, useful in migraine and other forms of headache; also in constipation, and for assisting digestion and relieving depression by increasing the action of the liver, intestines, and kidneys, and promoting free excretion of waste products.

Contains some sodium chloride, and is found of great service in migraine.—L. i./93,79.

The activity and palatability of the last five preparations may be increased, especially in winter, if taken in warm water. The combination of the salts of sodium and magnesium makes a more active purgative but the effervescent sodium sulphate alone is more pleasant to take.

Sal Carolinum. **True Carlsbad Salt.**

Dose.—1 to 2 drachms. This is imitated by the following:—

Sal Carolinum Factitium, P.G., P.Jap. **Artificial Carlsbad Salt.**

Dose.—20 to 60 grains (1·3 to 4 Gm.) in warm water.

Dried Sodium Sulphate 44, Potassium Sulphate 2, Sodium Chloride 18, Sodium Bicarbonate 36, all in fine powder. Mix. 53 grains to 1 pint of water is similar to Carlsbad Water.

Marienbad Salt is a similar aperient.

'**Vescettes**' of Carlsbad Salts. Each equivalent to 2 ounces of Carlsbad-Sprudel Water.

Pulvis Salis Carolini Factitii Effervescens B.P.C. *Dose.*—60 to 120 grains.

Exsiccated Sodium Sulphate 11 ounces, Potassium Sulphate ½ ounce, Sodium Chloride 4½ ounces, Sodium

Bicarbonate 54 ounces, Tartaric Acid 40 ounces, Gluside 28 grains. Dry separately and mix.

Pulvis Sodæ Tartaratæ Effervescens (*Off.*). **Seidlitz Powder.**

Sodium Potassium Tartrate, in dry powder, 120 grains, Sodium Bicarbonate, in dry powder, 40 grains, in the blue paper. Tartaric Acid, in dry powder, 38 grains in the white paper.

Sodii Succinas.

Dose.—5 grains (0·32 Gm.) every 3 or 4 hours.

A white crystalline compound, soluble 1 in less than 1·5 of water and practically insoluble in alcohol 90 per cent. Recommended in catarrhal icterus, the treatment being supplemented by alkaline waters. — M. 01,133.

Sodii Sulphocyanidum.

Dose.—5 grains (0·32 Gm.).

A crystalline colourless salt, very soluble in water (1 in 0·3) and soluble 1 in 0·6 of Alcohol 90 per cent. It has a sedative action on the nervous system, is an analgesic and may be found useful in nervous affections, arterial sclerosis, and chronic nephritis.

Sodii Sulpho-vinas, Sodium Sulphovinate. *Syn.* —SODIUM SULPHETHYLATE or ETHYLSULPHATE.

Dose.—¼ to 1 ounce (7 to 30 Gm.); is aperient and does not cause colic. The salt is in efflorescent colourless crystals.

Sodii Taurocholas, Sodium Taurocholate.

Dose.—2 to 6 grains (0·13 to 0·4 Gm.), in pill, keratin-coated to prevent solution until it reaches the bowels. A white or whitish amorphous powder, prepared from pig's bile. It has been recommended for gouty obesity and dyspepsia. Is added to culture media for separation of B. typhi abdom. from B. coli communis.—B.M.J. i./02,1473.

Sodii Glycocholas.

Dose.—2 to 6 grains (0·13 to 0·4 Gm.).

A similar salt, soluble 1 in 2 of water and 1 in 3 of alcohol 90 per cent., which appears to be a useful cholagogue for congestion of the liver, gallstones, constipation and melancholia.

Sodii Telluras, Sodium Tellurate.

Dose.—$\frac{1}{3}$ to $\frac{2}{3}$ grain (0·02 to 0·04 Gm.) in pill daily. A powerful antisudorific, in phthisical and other sweating. It gives the characteristic tellurium smell to the breath, and may cause diarrhœa if pulmonary lesions are far advanced.—B.M.J.E. i./91,110; ii./91,182; ii./96,84; Pr. lviii.336.

SPARTEINÆ SULPHAS.

Dose.—$\frac{1}{4}$ to 1 grain (0·016 to 0·065 Gm.), increased.

The sulphate of an alkaloid obtained from the leaves and branches of Broom, *Cytisus Scoparius* (*Genêt à Balais, Codex Supp.*). Is in colourless rhombohedral crystals, soluble 3 in 2 of water. The alkaloidal base is a syrupy liquid.

Injectio Sparteinæ Hypodermica.

Contains 1 grain of the Sulphate in 6 minims.

Dose.—2 to 6 minims (0·12 to 0·35 Cc.).

Hypodermic Tablets contain $\frac{1}{2}$ grain (0·032 Gm.),

Pills of Sparteine contain $\frac{1}{4}$ grain (0·016 Gm.) each.

Sparteine has been recommended as a remedy for morphine habit, *v.p.*352.

Has a tonic action on the heart, restoring its rhythm and accelerating its beats when in a weak atonic state.

Is not cumulative, a valuable diuretic, should be tried when digitalis fails, relieves stenocardiac attacks.

Prompt in action, but inferior to digitalis in power; useful in uncompensated heart disease.—Pr. xliv.60.

Oxysparteina is an oxidation product of sparteine. The following salt is in use;—

Oxysparteina Hydrochloridum.

Dose.—$\frac{1}{2}$ to $1\frac{1}{2}$ grains (0·032 to 0·1 Gm.) daily.

In transparent crystals, freely soluble in water. May be given hypodermically.

A useful cardiac stimulant where there is much contraction of vessels, as it hardly affects the latter.

SPHAGNUM.

Turf-Moss, *Sphagnum, sp. var.*

This, when dried, on account of its elasticity and great capability of sucking up or imbibing liquids, forms a useful dressing for absorbing the discharge from open wounds, and especially urinary discharge in bladder, kidney, and dropsical affections. It is antiputrescent, and at the same time deodorant. It is sold in compressed sheets, like cardboard, measuring 24 inches by 15 inches, (for varieties *vide infra*), which absorb 20 times their weight of water, and when disintegrated, may be formed into pillows or pads by enclosure in muslin bags, or the compressed dressing may be placed just as it is beneath the bed sheets.

Recommended as an absorbent of pus, leaving wound clean. May be used as a padding for splints.—M.C. Feb. 1892,292; several varieties are in use, viz.—

"**Hagedorn**" for general hospital and private practice. Is largely employed as a general absorbent dressing for urine, pus, and other discharges.

These are approximately $\frac{1}{8}$ inch thick.

"**Rudolphi**," thinner and more fragile than the above. Both the above may be placed beneath the bed sheets.

"**Gauze-Covered**," ready covered with a layer of absorbent gauze.

Moss Felt, softer, woven into sheets, not compressed. Suggested as a packing for splints.

In addition, **Moss Towels** for menstruation are prepared, the material being well suited for the purpose, and **Moss Soles** for boots, which are claimed to be warm in winter and cool in summer.

Moss (**Loose**) is one of the most useful absorbents for beds in the case of insane persons. It is deposited on the bedstead in place of the mattress, and the imbeciles lie direct on it in short shirts. The moss absorbs and deodorises all excrementa.

'STERULES.'

'Sterules' are glass capsules of sterile solutions for ophthalmic and general use. The sterule is inserted through an **Ejector** which is supplied, and its 'breech' end is snapped off at the file mark. It is drawn further through the ejector, held horizontally, and the other end is broken off at the file mark. The 'breech' end of the ejector is now covered with the index finger, and the soft part is pressed with the thumb and second finger to release a small quantity (sufficient for one application in eye work) of a *sterile* solution. The file marks are situated ¼ inch from the ends of the 'sterule.'

For general purposes **Large 'Sterules'** are prepared containing 10 minims of solution, *e.g.*, cocaine hydrochloride 5 and 10 per cent., *v.p.*204. — B.M.J. ii./02,980; B. & C. D. ii./02,77; also **Hypodermic Sterules.**

For list of solutions supplied in 'Sterule' form see index.

STILLINGIA, U.S.

The root of *Stillingia sylvatica*, Queen's Root, Queen's Delight, is used medicinally in America. Contains an alkaloid Stillingine (not to be confounded with Stillingin, *v. below*). In large doses it is emetic and cathartic, in small doses alterative, used for scrofula, syphilis, jaundice, dropsy depending on liver disease, and for piles.

Extractum Stillingiæ Fluidum, U.S.

Dose.—15 to 60 minims (0·9 to 3·5 Cc.), one part = 1 of root.

Liquor Stillingiæ Compositus, McDade's Succus Alterans.

A remedy for syphilis, consists of fld. ext. Smilax Sarsaparilla, fld. ext. Stillingia, fld. ext. Lappa Minor (burdock), fld. ext. Phytolacca, of each 2 oz., tincture of Xanthoxylum Carolinianum (prickly ash), 1 oz.; a teaspoonful increased to a tablespoonful three times a day before meals.

Stillingin. The chocolate brown powdered extractive

Dose.—1 to 3 grains (0·065 to 0·2 Gm.) in a pill.

STRONTIUM.

Similar comparative physiological experiments, conducted in France, to those mentioned under Sodium (*v.p.*473) tend to show that, next to this metal, Strontium is probably the most inoffensive of the alkaline earth-metals. Its salts improve the appetite, assist assimilation and nutrition, and increase body weight. They are also said to be antiseptic to the digestive tract.

Strontium salts are innocuous, not diuretic, and check formation of albumen in epithelial and parenchymatous, but not interstitial, nephritis.—L. i./92,47.

Strontii Bromidum, U.S. (+ $6H_2O$).

Dose.—5 to 30 grains (0·32 to 2 Gm.).

In deliquescent acicular crystals, soluble in an equal quantity of water. Used successfully in gastric affections, dyspepsia, &c.; also in epilepsy and chronic cardiac and renal diseases. Has less toxic action, and is better borne than potassium bromide.—Pr. xlix.141; B.M.J. i./95,1089.

Tablets contain each 5 grains (0.32 Gm.).

Effervescent Strontium Bromide. *Dose.*—1 drachm or more.

Contains 10 grains in 1 drachm.

'Vescettes' of Strontium Bromide are each equivalent to 60 grains of the above.

Strontii Bromidum Exsiccatum.

Dose.—4 to 24 grains (0·26 to 1·5 Gm.).

On drying the last salt it loses most of its water of crystallisation, 4 parts are about = 5 of crystals.

Valuable in acute gastric catarrh and vomiting of nervous origin.—Pr liii.130; B.M.J. ii./92,1286; B.M.J.E. ii./92,84.

Epilepsy, good results in.—L. ii./93,46; ii./96,870, 1056; L. i./99,1089; ii./99,958.

Useful in convulsions, epilepsy, and dilated stomach; less control over epilepsy than potassium bromide, but less liable to cause acne.—L. i./95,567; ii./98,988.

Is of less value than the potassium salt in cases of epileptic insanity.—L. ii./99,411.

Strontii Carbonas.

Dose.—5 to 30 grains (0·32 to 2 Gm.).

Strontii Iodidum.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.).

In white crystalline masses, freely soluble in water.

The action of bromide and iodide of strontium in exophthalmic goitre of children beneficial. — B.M.J. ii./98,1042.

Strontii Lactas, U.S.

Dose.—5 to 30 grains (0·32 to 2 Gm.).

A white crystalline powder, very soluble in water.

Of great service in albuminuria and Bright's disease, given up to 90 grains daily.—L. ii./91,1199; ii./94,992; i./95,567; P.J. 1895,959.

Recommended in Bright's disease, is a pure diuretic. —B.M.J.E. ii./96, 76; ii./97,40.

Strontii Salicylas.

Dose.—5 to 20 grains (0·32 to 1·3 Gm.) in cachet.

A white crystalline powder, slightly soluble in water.

Very valuable for chronic gout and lithæmia, and a good intestinal antiseptic.—B.M.J. i./95,14.

STROPHANTHUS (*Off.*).

The mature ripe seeds of *Strophanthus Kombé* (Oliver), freed from the awns, used in preparing the Kombé arrow poison in various parts of Africa, are of a greenish fawn colour, and are covered with silky appressed hairs. A section of the seed should give a green colour with sulphuric acid.

Antidotes to **Strophanthus preparations.**

After emetics give Tannic or Gallic Acid in water, followed by stimulants. Anæsthetics to relieve spasm. Potassium Permanganate has been recommended.

Varieties of strophanthus in commerce.—P.J. 1893, 868,927. Pharmacognosy of, ii./00,241,265.

The seeds of *S. Courmonti* (*Sacleux*) are now also found as an admixture.—P.J. i./01,518.

Strophanthus sp. have yielded two crystalline glucosides:—Strophanthin, from *S. Kombé*, which gives a green reaction with sulphuric acid, melts at 172·75° C., and breaks up into Strophanthidin, and the methyl-ether of a peculiar sugar,—and Pseudo-Strophanthin, probably from *S. hispidus* and other species which gives a red colour with sulphuric acid, melts at 179° C., yields Pseudo-Strophanthin on hydrolysis, and is about twice as active physiologically.—P.J. 1889,328; ii./00, 314,388.

Strophanthin.

Dose.—$\frac{1}{300}$ to $\frac{1}{100}$ grain (0·0002 to 0·00065 Gm.) hypodermically. Is irritating at the seat of injection.

Is a white micro-crystalline glucoside, freely soluble in water, allied in its physiological and therapeutical action to digitalin. Melts at 172·75°C. Injected under the skin of a frog it stops the action of the heart, with the ventricle pale and contracted, whilst the auricles are dark and distended; it seems to act directly on the cardiac muscular fibre. It is a cardiac tonic and diuretic.—P.J. 1890,533.

Presence of Choline and Trigonelline in strophanthin. —P.J. i./98,506.

Summary of effects of strophanthin :—pulse regulated and strengthened, dyspnœa and palpitation lessened, urine increased (apparently due to increase of blood pressure), appetite increased, action of bowels and perspiration not affected, — non-cumulative.—B.M.J. i./90,1327; L. ii./90,414; Pr. xlv. 130; Th. Gaz. 1890,489.

Extractum Strophanthi (*Off.*).

Dose.—$\frac{1}{4}$ to 1 grain (0·016 to 0·065 Gm.).

The seeds are first percolated with purified ether, and then with 90 per cent. alcohol; the alcoholic percolate concentrated and mixed with milk sugar, so that 2 parts of extract in powder = 1 part of seeds.

Tinctura Strophanthi (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Strophanthus Seeds, in No. 30 powder, 1; moisten with Alcohol (70 per cent.) *q.s.*; macerate for 48 hours, then percolate slowly to produce 20, and dilute to 40 with more alcohol. Is half the strength of old preparation. U.S. is double this strength with weaker spirit. 1 in 10 Alcohol (70 per cent.).—P. Aus. Add.

Should be 10 per cent. strength prepared by percolation with Alcohol 70 per cent.—C.U.D.

Experiments on removing fat from, by cooling to 14°C., and by other methods. Cooling proved satisfactory.—P.J. ii./99,469.

The tincture gives better results than strophanthin.—B.M.J. i./90,1327.

Seven-drop doses for alcoholism with weak heart; creates distaste for alcohol.—L. ii./94,211.

Pilula Strophanthi = 2, 4 or 8 minims of Tincture, combined with milk sugar. *Dose.*—1 to 3.

Tabellæ Strophanthi, each equal to 4 minims of Tincture, combined with chocolate. *Dose.*—1 to 5.

Tablets, Compressed, are also prepared equal to 2 and 5 minims of the tincture.

Tablets, Hypodermic, of Strophanthin, $\frac{1}{500}$ grain are prepared.

This drug is a powerful heart tonic and diuretic, replacing digitalis in many cases, and its effects are found to be non-cumulative.

A valuable cardiac tonic, succeeding after digitalis has failed.—L. ii./87,202,513 ; Pr. xl. 59.

Is of special value in the cardiac failure of prolonged typhoid fever.—L. ii./87,201,319,605.

Beneficial in heart weakness and failure of a functional nature.—B.M.J. i./88,901 ; L. ii./88,807.

Especially valuable in stenosis, but unsuitable in aortic disease ; pulse improves in force and rhythm. Contra-indicated in angina pectoris.—L. ii./88,1047 ; i./89,199,304 ; P.J. 1888,606.

Successful in angina pectoris ; strophanthin unreliable. —L. i./89,199,304.

Strophanthus of great value in renal insufficiency advantage of immediate action compared with digitalis.—Th. Gaz. 1890,436.

Should not be prescribed in advanced stages of heart disease, especially if nephritis present.— Pr. xliii.460 ; M.C. May 1890,130.

Strophanthus not as generally useful as digitalis, but occasionally of service where the latter has failed or is not tolerated. Useful where contraction of vessels great, as it acts less on these than on heart.—L. ii./92,277 ; B.M.J. ii./92,1156.

Useful in the cardiac failure of acute pneumonia following influenza.—B.M.J. i./98,1120.

Ouabaïn, a glucoside from Ouabaio wood, obtained from a *Carissa sp.* of the same natural order as strophanthus, is in colourless rectangular lamels, slightly soluble in cold water, freely in hot, fairly soluble in moderately strong spirit, insoluble in absolute alcohol and ether, but freely soluble in glycero-alcohol. It gives a red colour with sulphuric acid and has similar physiological properties to strophanthin, but is much more toxic in action. Ouabaïn has been used for whooping-cough in doses of $\frac{1}{1000}$ to $\frac{1}{250}$ grain every three hours.—B.M.J. i./90,950 ; Pr. xlv. 137; L. ii./91,887. Study on its physiological action.—B.M.J.E. i./92,27.

STRYCHNINA (*Off.*).

Dose.—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·004 Gm.), in solution or in pill.

The alkaloid obtained from Nux Vomica, St. Ignatius' beans (*v.p.*371), and the seeds of other species of

Strychnos. In trimetric prismatic crystals, colourless and inodorous. Amorphous Strychnine should not be used, as it is more liable to contain, as an impurity, Brucine (also contained in *Nux Vomica*). Pure Strychnine should not be coloured by strong nitric acid, indicating an absence of Brucine. It is very slightly soluble in water, about 1 in 6,700, about 1 in 310 of proof spirit, 1 in 150 of 90 per cent. alcohol, 1 in 400 of absolute alcohol, soluble also in chloroform, nearly insoluble in ether. Its salts are more soluble, and acids render the alkaloid more soluble in water. It is very poisonous; it affects the spinal cord by producing convulsions resembling those of tetanus.

Strychnicine, a new alkaloid has been isolated from the leaves. It is tasteless and of slight toxic power.—Y.B.P. 1903,158.

Antidotes.—Apomorphine Injection or Emetics followed by washing out the stomach with Potassium Permanganate, then give Potassium Bromide 4 drachm dose repeated in 2 drachm amounts every hour, continued if necessary. Chloral in drachm doses. Chloroform or Ether Anaesthesia. Amyl Nitrite Capsules and Paraldehyde have also been recommended. Artificial respiration.

Pilula Strychninæ contains
$\frac{1}{25}$, $\frac{1}{30}$, $\frac{1}{40}$, $\frac{1}{50}$, $\frac{1}{60}$, $\frac{1}{80}$ and $\frac{1}{100}$ grain.

Ferri et Strychninæ Citras.

Dose.—3 to 6 grains (0·2 to 0·4 Gm.) in solution.

In scales of a greenish golden colour resembling citrate of iron and quinine, freely soluble in cold water. It contains 1 per cent. of Strychnine.

Ferri, Quininæ et Strychninæ Citras.

Dose.—3 to 6 grains (0·2 to 0·4 Gm.).

This is in scales of a greyish-golden colour like the former preparation, but in addition to 1 per cent. of Strychnine it contains about 15 per cent. of Quinine.

Strychninæ Acetas.

Dose.—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·004 Gm.).

In small colourless acicular crystals, soluble 1 in 44 of water, imperfectly through loss of acetic acid.

Strychninæ Arsenas, Strychnine Arsenate.

Dose.—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·004 Gm.).

In small white acicular crystals, soluble 1 in 29 of water.

Successful in phthisis by hypodermic injection of ½ per cent. mixture with liquid vaseline. *Dose.*—4 to 15 minims daily.—L. i./89,596.

Strychninæ Hydrobromidum.

Dose.—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·004 Gm.).

In minute white crystals, soluble 1 in 55 of water.

Strychninæ Hydrochloridum (*Off.*).

Dose—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·004 Gm.).

In small trimetric prisms, soluble 1 in 35·5 of water.

Liquor Strychninæ Hydrochloridi (*Off.*).

Dose.—2 to 8 minims (0·12 to 0·5 Cc.).

Strychnine Hydrochloride 1, Alcohol (90 per cent.) 25, Distilled Water *q.s.* to 100. Is incompatible with *Liquor Arsenicalis* and Strychnine may be thrown out of solution if this liquor be prescribed with an alkaline salt such as potassium bromide often is. Acidulating the latter with hydrobromic acid will, in most cases, prevent this.—P.J. ii./00,389.

It is also incompatible with Potassium Iodide, for an insoluble Iodide may be thrown out.

Ph. points out that it is unsafe to dispense alkaline mixtures containing more than 8 minims of this solution per ounce, reckoning the solubility of the base Strychnine at 1 in 7000. It is, however, safer to avoid the possible deposition of the alkaloid altogether by not prescribing with Sodium Bicarbonate, Sal Volatile, &c.

For **hypodermic injection** a 1% solution in sterilised distilled water may be used. *Dose.*—2 to 6 minims.

Haustus Strychninæ Compositus. Mid. H.

Strychnine Hydrochloride Solution 4 minims, Quinine Sulphate 1 grain, Zinc Sulphate 1 grain, dilute Sulphuric Acid 2 minims, Water to 1 ounce.

Should prove a useful nerve stimulant.

Strychninæ Nitras. *Dose.*—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·004 Gm.).

In hard colourless needles, soluble 1 in 67 of water.

Injectio Strychninæ Nitratis Hypodermica.

Dose.—2 to 6 minims.

Strychnine Nitrate 1 grain, Distilled Water 100 minims. Heat gently till dissolved.

Tablets, Hypodermic, $\frac{1}{15}$ and $\frac{1}{10}$ grain.

Strychninæ Phosphas Acidus.

Dose.—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·004 Gm.).

In light shining acicular crystals, soluble 1 in 31·5 of water.

Strychninæ Sulphas.

Dose.—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·004 Gm.).

The neutral salt is in prismatic crystals, soluble 1 in 62 of water.

Tablets, $\frac{1}{60}$, $\frac{1}{50}$, $\frac{1}{30}$ grain each, for adminstration *per os*.

Hypodermic Tablets contain $\frac{1}{100}$, $\frac{1}{60}$, $\frac{1}{50}$ and $\frac{1}{30}$ grain.

Strychninæ Sulphas Acidus.

Dose.—$\frac{1}{60}$ to $\frac{1}{15}$ grain (0·001 to 0·004 Gm.).

In white silky acicular crystals with a slightly acid reaction, soluble 1 in 42 of water.

Strychnine hypodermically the only treatment found capable of arresting progressive muscular atrophy. Acts more directly than by mouth.—Gowers, Diseases of the Nervous System, 2nd ed., vol. i. p.496.

In nocturnal incontinence of urine and for cardialgia and gastralgia, Strychnine preparations have been used with good results.

Chorea minor in child which had resisted all ordinary methods, cured by nitrate of strychnine :—$\frac{1}{20}$ grain in pill 3 to 5 times daily.—M.C. Jan. 1892,252.

Drink-craving in cases of alcoholism is relieved by strychnine either by mouth or hypodermically.

Produces healthy sleep in cases of insomnia from worry.—Pr. xl. 28.

Is of immense value in obviating and controlling post-partum hæmorrhage.—B.M.J. ii./85,913,1059 ; i./86, 175.

Paralysis of soft palate after diphtheria in children quickly cured by hypodermic injections of $\frac{1}{32}$ to $\frac{1}{20}$ grain. —L. i./91,1060 ; B.M.J. i./92,1303 ; Pr. xlix.295.

Many cases of snake and adder bites in Australia cured by hypodermic injection ; also bite of poisonous spider.—L. i./91,1343 ; i./92,483 ; L. i./95,744.

Discussion on the hypodermic dose to relieve chloral poisoning.—L. i./94,782,840,915,1044.

Subcutaneous use of large doses for surgical shock, 15 to 20 minims of Liquor.—B.M.J. ii./99,1471 ; L. i./02, 1210,1357,1497.

SULPHONAL (*Off.*).

Syn. Dimethyl-methane-diethylsulphone. Produced by oxidation of a mixture of ethyl-mercaptan and acetone. In colourless crystals or powder, tasteless and odourless, soluble about 1 in 450 of water, 1 in 50 of cold, freely in hot alcohol. Melts at 125·5° C.

Dose.—10 to 30 grains (**0·65 to 2 Gm.**). In cachets or suspended with mucilage. Should be finely powdered, and followed by a draught of hot fluid. Unless in solution, a dose should be given at least an hour before sleep is desired.

Tablets, 5 grains (**0.32 Gm.**). *Dose.*—1 to 6.

Should be crushed and taken in warm water.

Capsules contain 5 and 10 grains.

Effervescent Sulphonal.

Dose.—1 drachm, or more.

Contains 5 grains in 1 drachm.

Haustus Sulphonal, G.H. Sulphonal 20 grains, Mucilage Mixture (*v.p.*86) 1 ounce.

Sulphonal is a soporific, does not affect digestion, pulse, or temperature, especially in nervous subjects.

Is slow in action on account of slight solubility; 30 grains may be given in solution in 1 ounce of brandy with 2 ounces of boiling water added (=about 140° F.). Is useful in all cases except mania.—M.P.C. i./89,532.

Good results in eight cases of chorea; in two unsuccessful.—L. ii./90,1048.

Trismus neonatorum cured by enemata of 3 grains, supplemented by internal use.—L. i./91,1060.

Useful in diabetes.—L. ii./90,938; M.C. April 1891,46.

Is not without risk if given in cases attended with considerable physical prostration.—L. i./92,488.

Chronic sulphonal poisoning; characteristic symptoms are disturbances of digestion and nervous system, ischuria, oliguria, and sometimes albuminuria.—B.M.J.E. i./93,23. May produce hæmatoporphyrinuria. —L. i./04,564.

Relieves spasms and cramps in fractured limbs.—M.C. Feb. 93,334; P.J. i./96,418.

Recovery after 365 grains.—L. i./04,219.

Tetronal.—*Syn.* Diethyl-methane-diethylsulphone.

Dose.—10 to 20 grains (**0·65 to 1·3 Gm.**). Best administered in cachets, followed by a draught of hot liquid.

Tablets, 5 grains (0·32 Gm.). *Dose.*—1 to 4.

In shining white crystalline tablets, or acicular crystals, melting at 185° F., odourless, with a camphoraceous bitter taste. Soluble 1 in 450 of water, 1 in 15 of alcohol.

Tetronal is allied to sulphonal, containing four ethyl groups in a molecule, two of which replace the two methyl groups in sulphonal, and it is stated that this doubles the hypnotic effect. The replacing of only one methyl group in sulphonal by ethyl forms

Trional—*Syn. Diethyl-sulfone-methyl-ethyl-methane.* **Trionalum, P. Aus. Add.; Methylsulfonalum, P.G. iv.**

Dose.—10 to 30 grains (0·65 to 2 Gm.), in cachets, as above.

In minute shining crystals, soluble about 1 in 300 of water, slightly in alcohol and in ether.

Tablets, 5 grains (0·32 Gm.). *Dose.*—1 to 6.

Recovery after poisonous effects of 125 grains.—L.i./03,1096.

Haustus Trional, G.H. 30 grains to Mucilage Mixture 1 ounce (*v.p.*86).

Trional has a hypnotic action intermediate between those of sulphonal and tetronal.—P.J. 1889,161; B.M.J. i./90,87.

Tetronal and Trional useful in some cases where Sulphonal failed; their advantage consists in having fewer after-effects.—B.M.J.E. ii./90,22; P.J. 1890, 161; Th. Gaz. 1890,699.

Tetronal the best sedative, Trional more effective in sleeplessness connected with neurasthenia and organic brain disease. Useless in that due to pain, and in morphine and cocaine habits. Ill effects very rare, and no tolerance established.—B.M.J.E. ii./92,31,36,75; ii./93,24,71. Both are more prompt in action than sulphonal, and are slightly cumulative.

Trional in 15-grain doses to cause sleep in insanity useful and safe.—Pr. li,446.

For sleeplessness of children.—L. i./95,49.

Chorea cured by Trional.—B.M.J.i./02,267.

Cured case of combined alcoholic and nicotine poisoning.—L.ii./01,223.

May produce hæmatoporphyrinuria: eight cases of poisoning known.—B.M J.E.ii./01,35.

SULPHUR.

Dose.—20 to 60 grains (1·3 to 4 Gm.) in milk, treacle, with confection of senna, or as Pulvis Glycyrrhizæ Compositus, *v.p.*278.

This is official as **Precipitated Sulphur** and **Sublimed Sulphur.** From the latter is prepared Confectio Sulphuris and Unguentum Sulphuris: 1 to 9 of Benzoated Lard; it is also used for making the two following ointments, but **Precipitated Sulphur** in all these preparations, for use either internally or externally, being free from grittiness, is much to be preferred: it is in fine powder if genuine, sublimes without residue, and has not the glistening appearance of the old Lac sulphuris (due to the presence of calcium sulphate).

Sublimed Sulphur checks dysentery.—L. i./01,1676.

Confectio Guaiaci Composita, L.H. Chelsea Pensioner.

Dose.—1 to 2 drachms (4 to 8 Gm.).

Guaiacum in powder 2, Sublimed Sulphur 3, Magnesium Carbonate 2, Ginger 1, Treacle, by weight, 12.

Acid Potassium Tartrate is occasionally added to the "Chelsea Pensioner."

Confectio Sulphuris. (*Off.*).

Dose.—1 to 2 drachms (4 to 8 Gm.).

Sublimed Sulphur 100, Acid Potassium Tartrate 25, Tragacanth 1, Syrup 50, Tincture of Orange 12·5, Glycerin 37·5.

Confectio Sennæ et Sulphuris, G.H.

Dose.—1 to 2 drachms (4 to 8 Gm.).

Confection of Senna 1, Confection of Sulphur 1.

Pulvis Guaiaci Compositus (Chelsea Pensioner) St. George's Hosp. *Dose.* —20 to 40 grains.

Guaiacum Resin, Precipitated Sulphur, Heavy Magnesium Carbonate, Gum Acacia and Potassium Carbonate, equal parts.

Jephson's Powder. *Dose.*—60 grains.

Precipitated Sulphur 2, Guaiacum Resin 1. For tonsilitis, acne, and constipation.

Tablets of Sulphur Præcip. 5 grains with Potassium Acid Tartrate 1 grain are prepared.

Trochisci Sulphuris (*Off.*) *Dose.*—1 to 6.

Contain Precipitated Sulphur 5 grains, Acid Potassium Tartrate 1 grain, Tincture of Orange 1 minim, in each, with Sugar and Acacia.

Continued use is beneficial in chronic diseases of alimentary canal and liver, also of skin and articulations.

Where sugar is to be avoided, may be given as

Pastillus Sulphuris Compositus, *v.p.*276.

Unguentum Sulfuratum, P. Aus. Add.

Soft Soap 60, Lard 30, Suet 30, to these melted and strained, sift in sulphur 30 and Prepared Chalk 5, add lastly Tar 30.

Unguentum Sulphuris c. Hydrargyro, U.C.H.

Sublimed Sulphur 2½ drachms, Sublimed Mercuric Sulphide 10 grains, Ammoniated Mercury 10 grains, Olive Oil 1 drachm, Lard to 1 ounce. To this may dded, to disguise its colour or odour, or increase ts activity, either 2 grains of vermilion, 10 minims of ucalyptus oil, 10 grains of phenol, or 5 minims of reosote. Useful in scabies and allied skin diseases f doubtful diagnosis.

Jnguentum Sulphuris Hypochloritis.

Sublimed Sulphur 12, Essential Oil of Almonds 2, Prepared Lard 84; mix, and add with quick manipulation ulphur Chloride (Liquid) 2.

Keep in a stoppered bottle; is sometimes made double his strength, *i.e.*, with half the quantity of basis. Useful n acne, psoriasis, and scabies.

Jnguentum Sulphuris Iodidi (*Off.*).

Sulphur Iodide 4, Glycerin 4; mix in a warmed nortar, and add Benzoated Lard 92.

Sulphaqua Charges and **Lacto-sulphur Bossé** are for dissolving in water to produce sulphur baths.

TABLETS.

(Compressed).

Tablets are frequently preferred to pills by the medical rofession and the general public. To meet the demand large variety of compressing machinery has been placed n the market. In the preparation of Tablets the naterial has first to be *granulated*, to prevent it icking between the dies and punches of the machine; is is effected by moistening with a little Alcohol or ater (to which, if desired, a minute quantity of mucilage ay be added), rubbing through a suitable sieve and ying *thoroughly*. To obviate the sticking referred to, lubrication with a small percentage of French Chalk (2 per cent.), or spraying with a solution of soft paraffin or Cacao Butter in Ether is resorted to in some instances.

Substances already in small crystals, *e.g.*, Potassium Chlorate, Ammonium Chloride, do not require this treatment. Care must be taken to employ suitable additions according to the requirements for which the Tablet is intended, and to obviate any possible chemical decomposition. Five or ten per cent. of starch is useful to ensure rapid breaking up of the Tablet. Deliquescent compounds should be treated with Gum Acacia or Tragacanth.

For Hypodermic Tablets sterilised milk sugar, or cane sugar, is a useful diluent.

These are prepared under the strictest aseptic precautions.

For machinery and other details see P.J. i./02,46,64, 84,151.

For List of Tablets in general demand, *see* Index.

TEREBENUM. (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

A mixture of dipentene and other hydrocarbons, produced by the action of sulphuric acid on oil of turpentine and distillation. Sp. Gr. 0·862 to 0·866. Should not affect the plane of polarised light. Is colourless, and has a very agreeable odour resembling fresh-sawn pine wood. It is not miscible with water, but may be emulsified by mixing it with one-sixth its weight of tragacanth powder, then adding water and shaking well. It is a powerful yet agreeable antiseptic, disinfectant, and deodoriser.

Capsules of Terebene contain 5 and 10 minims each.

Haustus Terebeni.—Vict. Park H.

Terebene 10 minims, Mucilage of Tragacanth 1 drachm, Glycerin 1 drachm, Cinnamon Water to 1 ounce.

Vapor Terebeni, T.H.

Terebene		40 minims.
Light Magnesium Carbonate...		20 grains.
Distilled water ...	to	1 ounce.

A teaspoonful in a pint of water at 140°F. for a stimulant inhalation. For medicating the antiseptic respirators, 10 drops of a mixture of equal parts, Terebene, phenol, and spirit of chloroform, is often used.

A dark-coloured liquid, with an odour resembling but not so agreeable as the above, is sold as a **disinfectant,** under the name of Terebene, and must be distinguished from the official liquid as above described; it is a useful deodoriser, but, being insoluble in water, does not permeate decomposing substances.

The vapour of Terebene is a useful sedative and antiseptic inhalation in phthisis, and, administered internally at the same time in 5-minim doses; useful also in dysentery.

Recommended for medicating the cotton wool of respirator for dry antiseptic inhalation in phthisis.

For winter cough, drops may be taken on sugar, and also may be inhaled.

Terebene may produce albuminuria in gouty kidney disease.—L. i./95,1434; and has caused hæmaturia.—L. i./04,652.

Terpinum Hydratum, P.G.—*Syn.* TERPINE.

Dose.—2 to 6 grains (0·13 to 0·4 Gm.) or more, in cachets, or pills, or suspended.

A derivative of oil of turpentine in prismatic crystals, resembling those of chloral hydrate, soluble in water about 1 in 250, more so if heated, soluble 1 in 10 of alcohol, and about 1 in 6 in oils; should have no odour of terebene; has been used with success in bronchitis, chronic and subacute; it assists expectoration in catarrhal affections. Is also a diuretic.—L. i./88,464; B.M.J. i./93,457.

Lessens secretion in initial catarrh of phthisis; useful as a hæmostatic in bleeding from lungs.—Pr. xliv.457.

Cough and bronchial secretion, also neuralgia, relieved by 5-grain doses.

Terpinol. *Dose.*—1½ grain (0·1 Gm.) or more in pill, or gelatine capsule. An agreeably aromatic liquid, is obtained by the action of dilute sulphuric acid on terpene.

It is used for lung affections; if it disorder the tomach, it should be given with meals.

Mackey's Terpinol Fluid is a non-poisonous disinfectant.

Terpineol. *Syn.* TERPILENOL. A product o fractional distillation of Terpinol. Is used for disguising odour of Iodoform and for scent production.

TEREBINTHINA CHIA, P.L.

Dose.—5 to 10 grains (0·32 to 0·65 Gm.).

An oleo-resin flowing from the incised trunk o *Pistacia Terebinthus;* obtained from Chio. This drug, has been used as a remedy for cancer of the female generative organs. Its taste resembles that of mastiche; it is agreeable and free from the bitterness and acridity of the pinaceous turpentines.

Mistura Terebinthinæ Chiæ.

To Acacia powder 5 and Tragacanth powder 1, contained in a dry mortar, add a solution of Chian Turpentine 5, in Ether 5 and mix; then add water 10, triturate until emulsified, and add gradually water 40. Stir frequently until the ether has evaporated, transfer to a bottle, and add water *q.s.* to 70.

Dose.—3 drachms (10·5 Cc.) daily, in divided doses, after food—gradually increased to 9 drachms. Contains about 30 grains in 1 ounce. This mixture has now replaced the formulæ previously published, and in many cases of cancer proves of undoubted service.

Pilula Terebinthinæ Chiæ.

Chian Turpentine 3, Sublimed Sulphur 2. In grains for one pill, in grammes for fifteen: *dose,* 2 every 4 hours. Lycopodium may be added to preserve their shape.

THEOBROMA.

The seeds of Cacao, *Theobroma Cacao.* When heated and deprived of husk and membrane, these yield cocoa-nibs. The nibs ground, and most of the oil pressed out, produce, when reduced to powder, the best forms of cocoa for use as a beverage.

Oleum Theobromatis (*Off.*).

The concrete oil of the seeds, expressed by means of heat, the yield being about 45 per cent. Melting at 88° to 93° F., below the temperature of the body, is much used for suppositories.

This melting point is somewhat too high, good commercial samples melt between 80° and 86° F. and even lower.

Pasta Theobromatis, Chocolate.

This is made by grinding the nibs into a paste, with sugar and vanilla or other flavouring added; it should contain not more than 50 per cent. of sugar and about 25 per cent. of fat (*Oleum Theobromatis*), and be free from gum, added starch, or other admixture.

The author uses chocolate for the preparation of medicated chocolate tablets. On account of its agreeable flavour and the preservative action of its fat and sugar, it forms a useful basis for administering many medicines. The solvent action of its fat renders it eminently useful for fixing **Nitroglycerin**, **Erythrol Nitrate**, **Exalgin**, **Mannitol Nitrate**, **Menthol**, and alkaloids, such as **Cocaine**, **Caffeine**, and **Apomorphine**; also for **Pepsin** and **Santonin** and preparations of **Bismuth.**

Theobromina, Theobromine.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

An organic base existing in the seeds of the above. It is a white crystalline powder, sparingly soluble in water, alcohol and ether. It is allied to Caffeine, being chemically viewed as dimethyl-xanthine, and Caffeine as trimethyl-xanthine.—See Caffeine, *v.p.*132.

Tri-Sodium Phosphate has a solvent action on the alkaloid, and by its employment 2 per cent. solutions may be obtained.—P.J. ii./99,11.

In angina pectoris, 20 to 30 grain doses spread over 24 hours lessens the frequency and severity of attacks. —Med. Record, Nov. 1902.

Agurin. — *Syn.* THEOBROMINE - SODIO - SODIC ACETATE.

Dose.—7½ to 15 grains (0·5 to 1·0 Gm.), up to 45 grains daily.

A deliquescent powder easily soluble 1 in 2 parts of water and about 1 in 200 of Alcohol 90 per cent. Has been used with advantage in sciatica and neurasthenia. Is strongly diuretic in action.—P.J. ii /02,48; B.M.J.E. i./02,99; L. ii./02,1762.

Diuretin.—*Syn.* THEOBROMINUM NATRIO-SALICYLICUM, **P. Aus. Add.**; **P.G. iv.**

Dose.—5 to 15 grains (0·32 to 1 Gm.).

Under this name is sold a sodio-salicylic compound of theobromine, containing about 50 per cent. of sodium-theobromine (or of *Mono*-Methyl-Xanthine); it is a white powder, freely soluble in water. Is diuretic, without affecting nervous system and causing sleeplessness.—L. i./90,42; ii./90,783; P.J.1889,501; Th. Gaz. 1890,99; L. i./96,1132; B.M.J.E. ii./00,3.

Tablets contain 5 grains of Diuretin.

A stronger diuretic than caffeine, and effects last longer; toleration not soon established; should be avoided in cardiac degeneration, especially with albuminuria.—Th. Gaz. 1890,760; L. ii./90,838.

Scarlatinal dropsy of children; a safe diuretic.—L. ii./92,212.

Of great value in cardiac and renal dropsy, seldom of use in ascites of hepatic origin; often causes diarrhœa and sometimes vomiting.—B.M.J.E. ii./92,87; i./93, 63,91,95. Recommended in ascites.—B.M.J.ii./92,1105.

Urinary troubles coincident with paraplegia relieved. —B.M.J.E. ii./93,80.

Poisonous effects followed three doses of 15 grains each.—L. ii./95,1268.

In angina pectoris it lessens the frequency of attacks. —Med. Record, Nov. 1902.

Iodo-theobromine.

Dose.—2 to 10 grains (0·13 to 0·65 Gm.).

Sodio-theobromine iodide, containing about 40 per cent. of theobromine in combination with iodide and salicylate of sodium. A white powder, soluble in water, recommended as a good diuretic and as a stimulant to cardiac systole, increasing blood-pressure. Useful in cirrhosis of liver and acute nephritis.—B.M.J. ii./94,1190.

Theophylline.—The synthesised alkaloid is sold under the name of THEOCIN.

Dose.—3 to 6 grains (0·2 to 0.4 Gm.), three or four times daily.

This alkaloid is present in small quantities in tea and coffee, and is an odourless crystalline powder, soluble "about 1 in 140" (1 in 200 by experiment) of cold water, and about 1 in 130 of Alcohol 90 per cent. It has marked diuretic properties.

Has been found useful in heart affections attended with symptoms of congestion, and nephritis with dropsy. —B.M.J.E. ii./02,39,56.

Tablets weigh 4 grains (0·26 Gm.).

Uropherin.—*Syn.* **Lithium-Diuretin.**

Dose.—5 to 15 grains (0·32 to 1 Gm.).

A white powder, soluble 1 in 5 of water. Is a compound of theobromine-lithium and lithium salicylate. A diuretic, with little action on the heart.—Am.M.S.B. 1893,1090.

THYMOL (*Off.*).

Dose.—½ to 2 grains (0·032 to 0·13 Gm.), in pills with powdered soap and a trace of alcohol, or in oily or aqueous solution.

A crystalline substance obtained from the volatile oils of *Thymus vulgaris, Monarda punctata* and *Carum copticum* (*v.p.*xxii). In large transparent rhomboidal crystals melting at 111° F. and having the odour of thyme, an aromatic peppery taste, is caustic to the skin and very irritating to the mouth and mucous membrane. Soluble 1 in 1,500 of water, 1 in 200 of glycerin, 1 in 8 of alcohol and glycerin, equal parts; soluble in fats and oils, and 8 in 3 of alcohol 90 per cent , and freely soluble in ether, acetic acid, and caustic alkaline solutions. Thymol rubbed with an equal weight of Menthol forms an oily liquid (see Menthol); with 3 parts of Thymol and 2 Chloral Hydrate, equal parts of Thymol and Camphor, and equal parts of Thymol and Phenol, similar liquefactions take place.

Liquor Thymol. 1 in 800 of warm water.

This saturated aqueous solution is antiseptic and antiputrefactive.

Mistura Oleo - Balsamica.—*Syn.* BALSAMUM VITÆ HOFMANNI. 'Tincture of Life.'

Dose.—1 to 4 drachms in water.

Oils of Lavender, Thyme, Lemon, Mace and Orange Flowers of each 4; Oil of Cloves and Cinnamon 3½ of each; Balsam of Peru 10½; Alcohol 90 per cent. to 1,000; allow to stand a few days, then filter.

Is used in Africa as a remedy for snake bites. A carminative stimulant.

Ophthalmic Discs of Thymol contain $\frac{1}{1000}$ grain (0·065 milligramme) combined with gelatin.

Pastillus Thymol is prepared, containing $\frac{1}{32}$ of a grain 0·002 Gm.), *v.p.*276.

Spiritus Thymol.

Dose, 3 to 15 minims (0·18 to 0·9 Cc.).

Thymol 1, Alcohol (90 per cent.) *q.s.* to 10; is convenient for dispensing, and for medicating the wool of antiseptic respirators.

Thymaglycine.

Dose per os.—1 to 2 drachms.

Sodium Benzoate 3, Glycerin 10, Thymol Water 50, Water to 100, Liquor Cocci *q.s.*

This preparation is beneficial in the treatment of rhinitis, pharyngitis, quinsy, gastric and intestinal catarrh.

For **spraying** into the throat and nostrils, may be diluted 1 to 3 with water.

For **vaginal irrigation** may be diluted with twenty times its volume or less of water.

As a **mouth wash** may be used undiluted with a brush for the gums.

Glycothymoline. A proprietary article employed in catarrhal conditions of the mucous membrane of the nose, throat, stomach, intestine, uterus and vagina.

Thymolin. Under this name a mixture of Naphthaline 18, Camphor 1, and Thymol 1 is sold.

Volckmann's Thymol Solution.

Thymol 1, Alcohol 20, Glycerin 20. Dissolve and add to Water 1,000. Used as a spray and antiseptic lotion; does not produce eczema.

Unguentum Thymol.

Is made 5 to 30 grains to the ounce of Vaseline, Petroleum Cerate, or Lard, the strength depending on the purpose for which it is applied. It is important that the Thymol should be dissolved in the basis by the aid of heat, and not made by simple mixture, as particles of undissolved Thymol produce great irritation; 10 grains dissolved in an ounce of Vaseline applied to the skin keeps off gnats, mosquitoes, &c.

Vapor Thymol, T.H.

Thymol 6 grains, Rectified Spirit 1 drachm, Light Magnesium Carbonate 3 grains, Water to 1 ounce. A teaspoonful to a pint of water at 140° F. for inhalation; useful in pharyngitis and laryngitis when associated with exanthemata. Stimulant and antiseptic.

Thymol Carbonate.—*Syn.* **Thymotal.**

Dose.—5 to 15 grains (0·32 to 1 Gm.).

A nearly tasteless, colourless, crystalline powder. Is not dissolved by the stomach and therefore proves valuable as a remedy for the intestinal worms, named ankylostomum duodenale, common in Italy. May prove useful in obstinate cases of tænia and other intestinal worms.

Tablets contain 10 grains.

References to Thymol.

5 to 20 grains to the ounce of soft paraffin is useful in the later stage of eczema, and dry later stages of psoriasis, and as a parasiticide in cases of a fungoid nature.

In burns, Lotion of Thymol 1 in 1500, and Thymolised Linseed Oil 1 in 100, are applied with good results.

Thymol 1, Ether 10, and Spirit 5, or Thymol 1, Petroleum Oil 18; used as pigments in ringworm of the scalp, whilst acting as parasiticides they dissolve the fat, loosen the hairs, and thus help epilation. A 2½ to 5 per cent. solution in a mixture of chloroform and olive oil also useful.

A valuable remedy for nematoid worms.—L. ii./92, 1156,1357; ii./94,1273; ii./97,659.

Thymol in 1 per cent. solution (Alcohol 3, Water 7), recommended vaporised in pertussis.—P.J. i./97,361.

Ankylostomiasis — infection with ankylostomum duodenale is treated by full doses—10 to 60 grains with previous and subsequent purging by castor oil.—M.A. 1904,148.

TINCTURÆ.

Two processes are prescribed for the preparation of official tinctures :—

(i.) **Percolation.**—The drugs in a suitable state of comminution are moistened with the menstruum, and, after twenty-four hours, percolated with more of the same, until about three-fourths of the required quantity is obtained. The marc is pressed, the expressed liquid filtered, and added to the percolate. The volume of tincture is then made up to the prescribed quantity by adding menstruum *q.s.*

(ii.) **Maceration.**—The drugs are agitated frequently with the whole of the menstruum, in a closed vessel, during seven days, the liquid strained, the marc pressed, the product mixed with the strained liquid, and the whole filtered, if necessary, without further addition of liquid.

Non-Alcoholic Tinctures.—*Syn.* GLYCERIN TINCTURES, AQUEOUS TINCTURES.

Under this name aqueous extractives of certain vegetable drugs preserved by the aid of glycerin are now prepared, and are used in temperance hospitals; they must not be substituted for the official alcoholic tinctures. Resinous drugs are not suitable for making aqueous tinctures, but the following are in some slight demand:—**Tincture, Non-Alcoholic** of **Orange, Belladonna, Camphor Compound** (?), **Cinchona, Cinchona Compound, Cardamom Compound, Gentian Compound, Lavender Compound, Nux Vomica, Opium, Rhubarb Compound, Squills, and Senega.**

Ethereal Tinctures, *v.p.*51.

For the **dispensing of resinous tinctures**, *e.g.*, Tinctura Asafœtidæ, Benzoini Simplex, Cannabis Indicæ, Cubebæ, Guaiaci Ammoniatæ, Quininæ Ammoniatæ, and Sumbul in mixtures, **Mucilage of Acacia** yields a more satisfactory mixture than Tragacanth except in the case of Tinct. Benzoini Co., Jalapæ, Myrrhæ, and Tolu. The Mucilage of Acacia is best diluted with as much water as possible and the tincture then added.

If **Salts** be present in the mixture the above rule applies, except in the case of Cannabis, where Tragacanth Mucilage should be used. Tinctura Podophylli requires no suspending agent in the absence of salts, but if any be present Mucilage of Acacia is best used.

Tragacanth Mucilage answers well for suspending Tinct. Jalapæ and Myrrhæ, but is useless for Tinctura Benzoini Co., Quininæ and Tolu. For Tinct. Benzoini Co. and Tinct. Tolu the two mucilages combined are best. In the case of a mixture containing 1 drachm of resinous tincture to the ounce, dilute 1 drachm of Mucilage of Acacia with as much water as possible, add the tincture, and lastly add the Mucilage of Tragacanth.

Tinctura Hydrastis, which in absence of salts requires no suspending agent, should have an addition of Mucilage of Tragacanth if salts be present in the mixture.

Tinctura Lupuli and Tinctura Cimicifugæ require no addition either in presence or absence of salts.—P.J. i./03,706.

TRAGACANTHA (*Off.*).

Dose.—2 to 10 grains (0·13 to 0·65 Gm.) or more.

From *Astragalus gummifer* and some other species of *Astragalus*, known in commerce as Syrian Tragacanth.

Gelanthum (Unna's Jelly).

Heat in a steam bath Tragacanth 110 grains, Gum Acacia 30 grains, Gelatin 120 grains, and Distilled Water 10 ounces, for 4 hours; press the paste through muslin, mix well and add Glycerin 6 drachms, heat again in a water bath for an hour, and add Distilled Water (containing in solution Thymol ¼ grain) *q.s.* to 12 ounces.—Phar. Formulas. Used as a basis for various antiseptics and combinations for skin medication.

Glycerinum Tragacanthæ (*Off.*).

Tragacanth, in powder 1, Glycerin 3. Mix, and add Water 1. Is a useful pill excipient, *v.p.*414.

Glucantha, G.H. Pill excipient.

Tragacanth 240 grains, Water 240 minims, Syrup of Glucose 2 (fluid) ounces.

Linimentum Exsiccans. *Syn.* **Bassorin Paste.**

Tragacanth 5, Glycerin 2, Alcohol (90 per cent.) 10, Water to 100. In the alcohol contained in a wide-mouthed bottle diffuse the tragacanth, and add the water, then add quickly the glycerin, diluted with as much water, and shake well. Alcohol is necessary to keep the preparation. Quickly dries on skin, producing pleasant cooling sensation. May be medicated with any drug.

Bassorin. St. John's Hosp.

No. 1 Tragacanth 5, Glycerin 2, Water 93. No. 2 contains Boric Acid 10 per cent.; No. 3, Salicylic Acid 5 per cent.; No. 4, Chrysarobin 5 per cent.; No. 5, Hydronaphthol 5 per cent.; No. 6, Ichthyol 30 per cent.; No. 7, Resorcin 30 per cent.; No. 8, Precipitated Sulphur 30 per cent.; and No. 9, Thioresorcin 5 per cent.

Mucilago Tragacanthæ (*Off.*).

Dose.—1 drachm to 1 ounce (3·5 to 30 Cc.) or more.

Improved formula suggested by the writer.

Alcohol (90 per cent.) 120 minims. Put in a 20-ounce dry bottle and add Tragacanth, in powder, 60 grains. Shake till evenly moistened and add Distilled Water *q.s.* to 10 ounces. Shake again quickly to make a uniform mucilage. This keeps much better than mucilage of acacia. One part to 3 of aqueous fluid will suspend heavy insoluble powders. *Vide* also p. 508 for resinous tinctures.

Pulvis Tragacanthæ Compositus (*Off.*).

Tragacanth 1, Gum Acacia 1, Starch 1, Sugar 3.

Dose.—20 to 60 grains (1·3 to 4 Gm.). Is used as last preparation, 10 grains to 1 oz., specially useful for bismuth oxynitrate.

TRIMETHYLAMINA.

Syn. SECALIN.

Dose of the solution.—20 to 60 minims (1·2 to 3·5 Cc.) every 2 to 4 hours.

A 10 per cent. aqueous solution of this tertiary monamine, is alkaline, colourless, has a strong, herring-brine odour, and is miscible with water. Used for acute articular rheumatism is found to relieve the pain and fever; its taste may be disguised by sweetened peppermint water or syrup of orange.

Trimethylaminæ Hydrochloridum.

Dose.—2 to 3 grains (0·13 to 0·2 Gm.) 3 to 5 times a day.

Is obtained by neutralising the solution with hydrochloric acid and evaporating to crystallization. It is in deliquescent prismatic crystals, very soluble in water, has a slight fishy odour, and a pungent, saline taste; may be given in solution, but more agreeably in a pill.

In acute rheumatism, given with excellent effects, especially when begun early.

Results of 32 hospital cases; it is a cardio-vascular sedative, limiting nutrition, and promoting expectoration, useful in acute attacks of rheumatism.—Pr. xxiii.365

TRITICUM, U.S.

Couch Grass.—*Syn.* Agropyrum I.C. Add.

The rhizome or underground stems of *Agropyrum repens*, Dog-grass, or Quitch. Contains gummy and saccharine demulcent principles. Is diuretic and emollient; used in bladder and kidney affections.

Decoctum Tritici. 1 to produce 20.

Dose.—2 to 8 ounces (60 to 240 Cc.).

Extractum Agropyri Liquidum, I.C. Add.

Dose.—1 to 2 drachms (3·5 to 21 Cc.).

Triticum, cut small 20; digest 3 successive times in Boiling Water 120. Evaporate the infusions to 15, add Alcohol (90 per cent.) 5, mix, and set aside for 24 hours. Then filter, and add to the filtrate Alcohol (90 per cent.) *q.s.* to produce 20.

TRITURATIONS, U.S.

General Directions.—Take of the substance 1, Milk Sugar 9. Mix equal quantities first and triturate together, adding more milk sugar from time to time, until the whole is added, and an impalpable powder is produced. By thus triturating, insoluble powders, such as Arsenious Acid, are rendered more easily and probably completely assimilated, and further, the apportionment of minute doses is more accurately effected. Triturates may be dispensed with other ingredients in either pills or powders or flavoured and coloured with Pulvis Rosæ Compositus, *v.p.*381. The only official Triturate is Trituratio Elaterini 1 in 10 U.S. The representative of this in B.P. is Pulvis Elaterini Compositus 1 in 40. The following list may be kept prepared 1 in 10 (10 per cent.):—

Trituratio Acidi Arseniosi	$\frac{1}{6}$	to	$\frac{2}{3}$	grain.
Trituratio Antimonii Tartarati ...	$\frac{1}{3}$	,,	20	,,
Trituratio Atropinæ Sulphatis ...	$\frac{1}{20}$	,,	1	,,
Trituratio Cocainæ Hydrochloratis ...	$\frac{1}{2}$	,,	5	,,
Trituratio Elaterini	$\frac{1}{4}$	,,	1	,,
Pulvis Elaterini Compositus, B.P. 1 in 40	1	,,	4	,,
Trituratio Ergotininæ Citratis ...	$\frac{1}{15}$	,,	3	,,
Trituratio Ferri Arsenatis	$\frac{5}{8}$	,,	$2\frac{1}{2}$	,,
Trituratio Gelseminæ Hydrochloratis ...	$\frac{1}{6}$	,,	$\frac{1}{2}$	,,
Trituratio Hydrargyri cum Creta ...	10	,,	50	,,
Trituratio Hydrargyri Perchloridi ...	$\frac{5}{16}$	,,	$\frac{5}{8}$	,,
Trituratio Hydrargyri Subchloridi ...	5	,,	50	,,
Trituratio Morphinæ Hydrochloridi ...	1	,,	3	,,
Trituratio Picrotoxini	$\frac{1}{10}$	,,	$\frac{2}{5}$	,,
Trituratio Sodii Arsenatis	$\frac{1}{4}$	,,	1	,,
Trituratio Strophanthi (1 grain = 10 minims Tinct.)... ...	$\frac{1}{4}$	,,	$1\frac{1}{2}$	,,
Trituratio Strychninæ Hydrochloridi ...	$\frac{1}{6}$	,,	$\frac{2}{3}$	,,
Trituratio Strychninæ Nitratis ...	$\frac{1}{6}$	,,	$\frac{2}{3}$	,,
Trituratio Strychninæ Sulphatis ...	$\frac{1}{6}$	,,	$\frac{2}{3}$	,,

The more active medicines are diluted 1 in 50 (2 per cent.), and are termed **Levigations** (Levigationes). They are as follows:—

Levigatio Aconitinæ	$\frac{1}{5}$	to	$\frac{5}{6}$	grain.
Levigatio Digitalinæ Crystallisatæ ...	$\frac{1}{5}$	,,	$\frac{5}{6}$	,,
Levigatio Digitalini Puri	1	,,	2	,,
Levigatio Hyoscinæ Hydrobromatis ...	$\frac{1}{4}$	,,	$\frac{1}{2}$	,,
Levigatio Hyoscyaminæ	$\frac{1}{2}$	,,	1	,,
Levigatio Potassii Cantharidatis ...	$\frac{1}{8}$	,,	$\frac{1}{4}$	,,

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TROCHISCI.

Lozenges.

Lozenges are now officially prepared with five different flavourings. Those with **Fruit Basis** are prepared with Black Currant paste, but are harder than the Fruit Lozenges of commerce—viz., Benzoic Acid ($\frac{1}{2}$ grain), Tannic Acid ($\frac{1}{2}$ grain), Eucalyptus Gum (1 grain), Guaiacum Resin (3 grains), Ipecacuanha ($\frac{1}{4}$ grain), Extract of Krameria (1 grain), and Extract of Krameria (1 grain) combined with Cocaine Hydrochloride (Gr. $\frac{1}{20}$).

Rose Basis.—Compound Bismuth (Carbonate 2 grains), Potassium Chlorate (3 grains), and Sodium Bicarbonate (3 grains).

Simple Basis.—Catechu (1 grain), Reduced Iron (1 grain), and Santonin (1 grain).

Tolu Basis.—Phenol (Carbolic Acid) (1 grain), Morphine (Hydrochloride $\frac{1}{36}$ grain), and Morphine Hydrochloride ($\frac{1}{36}$ grain) combined with Ipecacuanha ($\frac{1}{12}$ grain).

Orange (Tincture) is used to flavour Sulphur Lozenges (5 grains).

Reference should be made to the index for the various TROCHISCI in use. Those with the affix:—

'R' have Rose basis;
'S' have Simple Sugar basis;
'T' have Tolu basis;

'G' have Gelatin basis, and are the commonly sold **Pastils** or **Jujubes** of oval or round shape (the latter are frequently "sugared." *Vide* also **Pastilli Glycogelatin**, p.275.

UNGUENTA.

Ointments.

The principal **Bases** employed in preparing the official Ointments are :—**Lard**, **Benzoated Lard**, and **Lard** with **Oleic Acid** (for Alkaloids) ; **Paraffin Soft** (**White** or **Yellow**), and **Hard Paraffin**, and their combination **Paraffin Ointment** (**White** or **Yellow**) ; and **Wool Fat** (**Hydrous**).

In addition, combinations of **Almond Oil**, **Beeswax** (**Yellow and White**), **Camphor**, **Glycerin**, **Oleic Oil**, **Spermaceti**, and **Prepared Suet** are ordered.

Unguentum Simplex (B.P. 1885) was composed of White Wax 2, Benzoated Lard 3, Almond Oil 3.

URANII NITRAS (*Off.*).

Dose.—½ to 5 grains (0·032 to 0·32 Gm.)

Is in large lemon-yellow slightly efflorescent prismatic crystals. It is soluble in half its weight of water, and has an astringent styptic taste. Its solution, 10 grains to an ounce, is used as a throat spray, and internally it has been given with good effect in diabetes in dose of 1 to 5 grains. It must be given with caution. It possesses radio-active properties *vide* Radium.

Tablets, 1 grain (0·065 Gm.). *Dose.*— to 5.

Uranii et Quininæ Chloridum.

Dose.—3 to 6 grains (0·2 to 0·4 Gm.) thrice daily.

In yellow minute granular crystals, soluble 1 in about 100 of water.

This salt and the nitrate are useful in diabetes, in doses of 1 to 2 grains, freely diluted, after food ; do not disturb digestion or cause intestinal irritation.—B.M.J. ii./95,467.

To be tried as a cure for cancer and for gout.—L. i./03,476.

UREA.

Syn. CARBAMIDE.

Dose.—10 to 60 grains (0·65 to 4·0 Gm.) thrice daily, may be given in a mixture flavoured with lemon syrup.

The full dose is "practically an addition of ½ per cent. of artificial Urea to the normal quantity circulating in the blood."—Harper.

It is in colourless dimetric crystals soluble 1 in 1 of water and in alcohol 90 per cent. about 1 in 7½.

In medicine the synthetic product is used (made by acting on Phenyl Carbonate with Ammonia, the products of the reaction being Urea and Phenol. Phenyl Carbonate is made by passing Phosgene, *i.e.*, Carbonyl Chloride into dilute Sodium Phenate solution). Wöhler in the year 1828 succeeded in converting Ammonium Cyanate into Urea, it was the first animal product made by a purely chemical synthesis.

Urea was first used as an antiperiodic and febrifuge in cases of ague. It was subsequently employed as a diuretic in chronic gout and kidney disease, and recently has been highly recommended for use in phthisis, on the ground that gouty persons are comparatively immune from tuberculous diseases and it was thought that Urea might be the immunising agent. It is, in fact, regarded as an antitoxin to B. tuberculosis and as efficacious in phthisis as mercury is in syphilis.

The cases most suitable for its use are: those of tuberculous pleurisy, laryngitis, peritonitis, lupus vulgaris, hydrocephalous children, tabes mesenterica, enlarged tuberculous glands, and those cases of lung disease in which the sputum shows an abundance of bacilli with few cocci.

It is unsuitable in acute miliary tuberculosis or when the temperature is 101° or more or when there is gastritis, and in cases where the cocci predominate in number over the bacilli, Koch's typical bacilli being scanty.—L. i./01,1672; ii./01,1567,1709.

In the knowledge of the authors an open tuberculous wound of the knee, from which a woman had suffered for many years, healed up completely after a brief course of urea internally.

Advised for lupus combined with the "X" rays.—L. i./02,658.

A 3 per cent. solution when added to a culture medium proved fatal to B. tuberculosis.—B.M.J. ii./02.397.

Urea valuable for tuberculosis.—B.M.J. ii./02,1235.

Urea in tuberculosis does not stimulate the heart.—L. ii./02,1383.

For the estimation of urea in urine, *see* p.608.

Veronal.—*Syn.* DIETHYL-MALONYL-UREA.

Dose.—7 grains (0·46 Gm.).

A white crystalline powder, soluble in 145 parts cold water, so is best given in cachets. Is more soluble in hot water, and is also recommended to be given in hot tea. This compound has a soporific action said to be four times as powerful as sulphonal. Is indicated in nervous restlessness, insomnia and depression. A harmless sedative for maniacs and in cardiac troubles. Is said to favour metabolism and nutrition. Does not affect temperature or respiration.—C. & D. i./03,1016; B.M.J.E. ii./03,51; ii./03,59; i./04,7; Pr. lxx.453; B.M.J. i./04,538; B.M.J.E. i./04,44.

Poisoning by, recovery.—L. i./04,223.

Tablets weigh 7 grains.

Ursal.

Dose.—10 to 33 grains.

A combination of urea with salicylic acid in white acicular crystals partially soluble in water, readily so in alcohol. Used as a remedy in gout and rheumatism.

URETHANE.

Syn. ETHYL CARBAMATE.

Dose.—10 to 60 grains (0·65 to 4 Gm.).

Is in colourless prismatic crystals, easily soluble in water, tasting like nitre, inodorous; used as a hypnotic; produces normal sleep; heart is not affected. Especially suitable for children, cases of delirium tremens, and in acute mania.

Proved useful in tetanus.—L. i./86,1112.

Is antagonistic to strychnine.—L. ii./86,31.

Relieves insomnia of cardiac disease.—L. ii./85,1167.

Urethane retards digestion but not decomposition.—B.M.J. ii./91,115.

Tablets, 5 grains (0·32 Gm.). *Dose.* —2 to 12.

Quinine Urethane.

Dose.—½ to 3 grains (0·032 to 0·2 Gm.).

A compound of Quinine and Urethane employed hypodermically as it is non-irritating.

Is obtained by heating Quinine Hydrochloride 3 with Urethane 15 and water 3 parts.—P.J. ii./02,273.

Euphorin. — *Syn.* PHENYL-URETHANE; CARBANILIC ETHER.

Dose.—3 to 6 grains (0·2 to 0·4 Gm.) 3 to 5 times daily, preferably dissolved in Marsala or Malaga.

In white acicular crystals, slightly soluble in water, freely in alcohol, with a faint aromatic odour and slightly acrid taste. Large doses weaken pulse and respiration and lower temperature, but do not affect heart and blood pressure.

An energetic antipyretic and useful analgesic in acute rheumatism, neuralgia, and nervous headache. As ointment or powder checked suppuration and removed bad odour in syphilitic ulcerations. — P.J. 1889,501; 1890,377; L. ii./91,29,33; B.M.J.E. ii./90,22; ii./92, 23; i./93,24.

Special use in relief of orchitis.—B.M.J. ii./98,1055.

Hedonal, **Methyl-propyl-carbinol Urethane.**

Dose.—8 to 15 grains (0·5 to 1 Gm.) in cachets or suspended in water.

The Urethane of a secondary amyl alcohol in white micro-crystalline powder with saline taste, slightly soluble in water, more so in dilute alcohol; used as a hypnotic in neurasthenia and hysteria in women, safe and free from ill effects. Will produce a sleep of 7 hours' duration.—P.J. ii./00,210; B.M.J.E. ii./00,12; P.J. ii./00,754.

Tablets contain 7½ grains (0·5 Gm.).

Uralium.—*Syn.* URAL. A compound of chloral and urethane, in colourless shining lamellar crystals, has been recommended as a hypnotic in doses of 15 to 45 grains.—B.M.J. i./89,609; Th. Gaz. 1889,283,348, 688. Uncertain in effects, disagreeable to take, often followed by nausea and disorders of digestion.–L.i./91,46.

VALERIANÆ RHIZOMA (*Off.*).

The dried rhizoma and roots of *Valeriana Officinalis*, collected in the autumn, are used to prepare

Tinctura Valerianæ Ammoniata (*Off.*) 1 in 5. *Dose.*—½ to 1 drachm (2 to 3·5 Cc.). Is of great value as an antispasmodic and nervine tonic for hysteria.

Extractum Valerianæ Liquidum, U.S. 1 = 1. *Dose.*—20 minims (1·2 Cc.). A strong tincture of reddish brown colour, and represents the full activity of the drug.

Extractum Valerianæ. *Dose.*—1 to 5 grains (0·065 to 0·32 Gm.). This solid extract is prepared by concentrating the liquid extract to extract consistence.

Acidum Valerianicum. *Dose.*—1 to 5 minims (0·06 to 0·30 Cc.), in syrup or in gelatin capsules. An oily liquid having Sp. Gr. about 0·93. Has been employed in hysteria and nervous diseases.

Ferri Valerianas, U.S. *Dose.*—3 to 15 grains (0·2 to 0·1 Gm.). A dark brick red amorphous powder, has a slight odour of the acid and a slightly astringent taste; is not soluble in water, and should be dispensed in cachets. Is a nervine stimulant and emmenagogue, and is used in anæmia, hysteria, and chorea.

Quininæ Valerianas, Quinine Valerianate.

Dose.—1 to 4 grains (0·605 to 0·26 Gm.).

In white shining crystalline, odourless, rhomboidal plates, or, as more frequently met with in commerce, an amorphous white powder with a slight valerianic odour, soluble 1 in 110 of cold water; best administered in pills with glycerin of tragacanth and a little acacia as excipients; given in nervous headache and hysteria.

Sodii Valerianas.

Dose.—1 to 5 grains (0·065 to 0·32 Gm.).

In white crystals; used as a nervine sedative in hysteria and mania.

Zinci Valerianas, Zinc Isovalerianate (*Off.*).

Dose.—1 to 3 grains (0·065 to 0·2 Gm.).

In pearly tabular crystals. Pills containing 3 grains in each are generally kept prepared.

Pilula Trium Valerianatum, *v.p.* 443.

Pilula Zinci Valerianatis, T.H.

Zinc Valerianate 1 grain, Compound Pill of Asafetida 2 grains. *Dose*, 1 or 2.

Zinc Valerianate prevented recurrence of attacks of hay fever.—B.M.J. i./96,967.

Valerianic Diethylamide. *Syn.* VALYL.

Dose.—2 grains (0.13 Gm.).

An oily liquid of a somewhat nauseous taste and odour.

Gelatin capsules under the above synonym are in use as a substitute for valerian preparations, and are given in the treatment of nervous and utero-genital affections.

Validol. *v.p.*350.

Guaiacol Valerianas. *v.p.*230.

VERATRI VIRIDIS RHIZOMA.

Green Hellebore Rhizome.

Dose, in powder.—1 to 5 grains (0·065 to 0·32 Gm.)

The dried rhizome and rootlets of *Veratrum viride*, imported from the United States. Its powder excites sneezing, and it contains the alkaloids Jervine, Veratrine, and Veratroidine. The rhizome of *V. album* and a Wine prepared from it were official in P.L. 1851. It possesses similar properties to *V. viride*. They are recommended as cardiac, arterial, and nervous sedatives. They are said not to be narcotic, but they lower the pulse, respirations, and temperature of the body. Acts on the heart as a powerful cardiac poison analogous to digitalis, but is much more rapid in its action; does not lower the temperature in health. For puerperal eclampsia is valuable from its control over increased arterial tension and cerebro-spinal excitement.

This drug must be distinguished from **Helleborus Niger**, the **Black Hellebore**, or **Christmas Rose**, which possesses purgative and emmenagogue properties.

Tinctura Veratri Viridis, **B.P.C.** (**B.P.** 1885.)

1 in 5 of alcohol 90 per cent.

Dose.—5 to 15 minims (0·3 to 0·9 Cc.).

Useful in apoplexy from hæmorrhage or effusion, and for cerebral complications in erysipelas.

Uræmic convulsions checked.—B.M.J.E. i./03,24.

The tincture requires careful administration in puerperal eclampsia, but 20 to 30 minims may be given.—P.J.ii./02,17.

VERATRINA (*Off.*).

Dose.—$\frac{1}{70}$ to $\frac{1}{16}$ grain (0·0009 to 0·004 Gm.), in a pill carefully triturated with milk sugar and glycerin of tragacanth. An alkaloid, or mixture of alkaloids, principally Cevadine with some Cevine, obtained from Sabadilla or Cevadilla seeds—*Schœnocaulon officinale*—in white or greyish white pulverulent masses; it powerfully irritates the nostrils and excites sneezing; taste bitter and acrid. Nearly insoluble in water; soluble 1 in 11 of 90 per cent. alcohol; 1 in 6 of ether; readily and almost completely soluble in diluted acids (a little resin is left). It is poisonous, but has been used as an antipyretic and circulatory sedative in fevers and acute inflammations—resembles Aconitine in its general effects—irritates mucous membranes, causes sneezing, pricking and twitching of the skin, given in large doses it causes vomiting and purging; sometimes given for neuralgia, spasm, rheumatism and gout, but its principal use is externally in the form of ointment for neuralgic pains.

Oleatum Veratrinæ, U.S.
Veratrine 2, Oleic Acid 98 (by weight). Useful for neuralgia. Too weak, 10 per cent. preferable. It is employed as a pigment.

Unguentum Veratrinæ (*Off.*).
Veratrine 1, Oleic Acid (by weight) 4 (1 grain=2 drops); warm gently to dissolve, add lard 45. It excites a sensation of warmth and pricking, followed by coldness; if applied for some time, it will produce a red rash. Like aconitine ointment, it is useful for neuralgia. The ointment is often made stronger, 20 to 40 grains to the ounce; it proves very useful in the treatment of sciatica, rubbed into the painful part for 20 to 30 minutes, 2 or 3 times a day, also useful in the neuralgic pain consequent on shingles.

Alcoholic tremor, and that of sclerosis were relieved by $\frac{1}{130}$ grain doses four times a day.—L. ii./83, 118.

Internally and externally, recommended for pruritus. —M.T.G. i./84,509; Pr. xxxiii,61.

VERBASCUM THAPSUS.
Great Mullein.

This indigenous scrophulariaceous plant is much used as a household remedy on the Continent, and a sweetened decoction in milk, 1 in 5 of fresh leaves or about 1 in 40 of dried, is employed in Ireland in incipient phthisis for its weight increasing and curative power.

Smoking the dried leaves controlled racking cough in a case of phthisis.

Tinctura Verbasci. 1 in 8 of proof spirit.
Dose.—20 to 60 minims (1·2 to 3·5 Cc.).

ZINCUM (*Off.*).

Zinc, Arsenic—free.

To prepare, melt in a clay crucible and add small pieces of Sodium at intervals, about 15 grains to a pound of the Zinc. Remove the scum, avoiding iron implements throughout, and repeat the operation in another clean crucible. Granulate by pouring into water when almost solidified.—O. Hehner.

Zinci Acetas (*Off.*).

Dose.—1 to 2 grains (0·065 to 0·13 Gm.) as a nervine tonic, 10 grains for an emetic dose.

Zinol is a mixture of Zinc Acetate and Aluminium β-naphthol-disulphonate Solution 0·3 per cent. is used for gonorrhœal, vaginal and uterine catarrh.

Zinci Boras, Zinc Borate.

In white amorphous powder; applied in the form of ointment is used for eczema.

Zinci Bromidum, Zinc Bromide, U.S.

Dose.—3 to 10 grains (0·2 to 0·65 Gm.) in water.

A white granular powder, very deliquescent, odourless, having a sharp saline and metallic taste, and a neutral reaction, very soluble in water and alcohol. As both bromides and zinc salts have been used with success in epilepsy, this salt has been given with the intent of combining the action of both.

Zinci Chloridum, Zinc Chloride (*Off.*).

In deliquescent masses soluble 1 in 0·34 of water. Might with advantage be estimated volumetrically with Silver Nitrate and Potassium Sulphocyanate.—P.J. i./02,551.

Causticum Zinci Chloridi. St. John's Hosp.

Zinc Chloride 4, Solution of Antimony Chloride 2, Starch 1, Glycerin *q.s.*

Bougard's Caustic Paste.

Mix well in a mortar Wheat Flour 120 gr., with Starch 120 gr. and add (each finely powdered) Arsenious Acid 2 gr., Mercuric Sulphide 10 gr., Ammonium Chloride 10 gr., Mercuric Chloride 1 gr., finally add solution of Zinc Chloride 1 ounce.

Collodium Zinci Chloridi. 1 in 6 of collodion.

Guttæ Zinci Chloridi, R.O.H. 0·5 in 100 of sterile water.

Guttæ Zinci Chloridi cum Cocaina, R.O.H.

Zinc Chloride 0·5 and Cocaine Hydrochloride 2 (St. Th. H. has only 0·25) in 100.

Liquor Zinci Chloridi (*Off.*). Sp. Gr. 1·530.

Four minims of this solution = 3 grains of solid Zinc Chloride. On diluting this Liquor, or making a solution of the salt, with water, generally a white precipitate (Basic Oxychloride) is formed, which may be redissolved by adding a trace of hydrochloric acid.

Zinc Chloride is a powerful caustic, antiseptic, and antiputrescent. The Liquor, or an impure solution known as Sir W. Burnett's Disinfecting Fluid, is a powerful deodorising antiseptic solution; it is odourless (but *very poisonous*) and specially useful for disinfecting the utensils, &c., in the sick-room of fever patients; it quickly permeates or disintegrates all organic matter *with which it comes in contact.*

Pasta Zinci Chloridi, Mid. H.; R.O.H.

Zinc Chloride	... ...	16 ounces.
Opium, in Powder	...	1½ ounces.
Hydrochloric Acid	...	6 drachms.
Boiling Water	... to	1 pint.

Macerate the Opium in 12 ounces of the water for 12 hours, add the acid, and filter, dissolve the Zinc Chloride in the filtered liquid, and add water *q.s.* to produce 1 pint.

To above solution	... ...	1 ounce.
Add Wheaten Flour...	...	120 grains.

Mix and heat in a water bath until of a proper consistence. It is used as a caustic for cancerous sores, spread on lint, one or more layers being used. Weaker and firmer applications containing more flour are also used. Zinc Chloride pounded with an equal weight of oil of theobroma is sometimes used, and may be formed into darts, spear or rod-shaped, for insertion into wounds or sores.

Pasta Zinci Chloridi, U.C.H.

Zinc Chloride 1, 2, or 4 parts, Starch in powder 6, Lard 1. Powder the Zinc Chloride, incorporate the Lard, and starch, then add Glycerin of Starch, *q.s.*

Solutio Zinci Chloridi Antiseptica.

Zinc Chloride 1, Distilled Water 11.

This solution produces such an antiseptic effect upon the tissues of a recent wound, that, as the result of a single application, the cut surface, though not presenting any visible slough, is rendered incapable of putrefaction for 2 or 3 days, notwithstanding its exposure to septic influence. It is particularly useful in tongue cases, after the removal of tumours of the jaws, or operations about the anus, and after amputations or excisions in parts affected with putrid sinuses; it is freely applied on a piece of lint to all textures including bones, and injected into sinuses.

Zinc Chloride has the property of rendering a wound aseptic which has already become septic. An 8 per cent. solution is more energetic than a 5 per cent. solution of carbolic acid, and is useful in checking parenchymatous hæmorrhage after operations.

One per cent. solution injected into ranula and ganglions is painless; the cysts harden.—Y.B. 1891,202.

Subcutaneous injections may cause sloughing.—L. ii./94,41.

Zinc Chloride Solution as an interstitial injection for new growths has been used with some success.—B.M.J. i./93,694.

Zinci Citras, Zinc Citrate.

Dose.—3 to 12 grains (0·2 to 0·8 Gm.).

An amorphous white powder with a sharp metallic taste, not perfectly soluble in water, as it is a basic salt. Used for epilepsy.

Zinci Cyanidum, Zinc Cyanide.

Dose.—$\frac{1}{10}$ to 1 grain (0·0065 to 0·065 Gm.).

An insoluble white powder, is of value in heart diseases, and resembles digitalis in its effects in that it relieves palpitation and irregularity of action.

Possesses antiseptic properties, but not equal to the Mercuro-Zinc Cyanide *q.v.*

Zinci et Potassii Cyanidum.

Dose.—$\frac{1}{10}$ to 1 grain (0·0065 to 0·065 Gm.).

Is a soluble cyanide, possessing all the properties of hydrocyanic acid in a stable form.

Zinci Lactas, Zinc Lactate.

Dose.—3 to 30 grains (0·2 to 2 Gm.).

Is in white crystalline crusts, with a sharp metallic taste, soluble 1 in 60 of water, but insoluble in alcohol. This salt least deranges the stomach, and has been much used in France for epilepsy.

Zinci Nitras, Zinc Nitrate.

In deliquescent crystalline masses, is caustic like the chloride, but produces less pain.

Zinci Oxidum, Zinc Oxide (*Off.*).

Dose.—3 to 10 grains (0·2 to 0·65 Gm.).

Tablets, 2 grains.

Is a good nervine tonic, and is given for nervous debility, migraine, hysteria, and to check night sweats.

Unguentum Zinci (*Off.*).

Zinc Oxide, sifted, 3, Benzoated Lard, melted, 17.

Unguentum Zinci cum Acido Salicylico, Mid. H.

Salicylic Acid 40 grains, Zinc Ointment 1 ounce, Soft Paraffin 1 ounce.

Vaselinum Zinci Oxidi.

Zinc Oxide 1, White Vaseline 9. For surgical use.

Cremor Zinci.

Zinc Oxide 3, White Vaseline 17, Perfume *q.s.* Is much superior to violet powder for nursery use.

Cremor Zinci et Calaminæ, V.C.H.

Prepared Calamine 1, Zinc Oxide 1, Lime Water 4, Olive Oil 4.

Gelatinum Zinci, B.P.C. GELATUM ZINCUM.

Gelatin 3, Water 9, soak 12 hours, then heat to dissolve, and add Zinc Oxide 2, previously rubbed down with Glycerin 4¾. For use it is melted and applied with a brush to eczematous surfaces. — B.M.J. ii./87,449. Ichthyol and Resorcin may be added and the **Gelatin Basis** may be combined with other medicaments.

Gelatinum Zinci, V.C.H.

Gelatin 2 drachms, Zinc Oxide 3 drachms, Prepared Calamine 1½ drachms, Ichthyol 10 grains, Glycerin 6 drachms, water 1 ounce.

Glycogelatina Zinci Oxidi, Mid. H.

Zinc Oxide 3, Gelatin 3, Glycerin 6, Water 8. **Pasta Zinci Gelatini, St. Th. H.**, has also the same ingredients in different proportions.

Unna's Paste.

Zinc Oxide 5, Kaolin 1, Benzoated Lard 14. A soft form consists of equal parts of Prepared Chalk, Zinc Oxide, Linseed Oil and Lime Water.

Pasta Unna, K.C.H.

Zinc Oxide 2, Gelatin 3, Glycerin 6, Water 8. Melt, mix and add Ichthyol (Ammonium) 2 per cent.

Pasta Zinci, V.C.H.

Zinc Oxide, Starch Powder, Hydrous Wool Fat, Soft Paraffin, of each 2 drachms, Salicylic Acid 10 grains.

Vernissum Glyco-Gelatin, "Zinc Varnish," W. H. has Gelatin 3, Zinc Oxide 3, Glycerin 5, Water 9. To this may be added 10 of Precipitated Sulphur or 5 to 10 of Ichthyol.

Gelatina Zinci Dura, St. John's Hosp.

White Gelatin 4, Zinc Oxide 3, Glycerin 5, Water 9. Use 1 part less of Zinc Oxide if to combine with ichthyol or precipitated sulphur.

Lassar's Paste for Eczema. Zinc Oxide 24, Starch 24, Salicylic Acid 2, Vaseline 50.

Pilula Zinci cum Belladonna, T.H.

Zinc Oxide 2 grains, Extract of Belladonna $\frac{1}{8}$ grain. (St. Th. H. has $\frac{1}{4}$ grain). *Dose.*—1 or 2 at bedtime.

Pulvis Zinci et Amyli. Zinc Oxide 1, Starch 2.

Pulvis Zinci et Hydrargyri Subchloridi (W. H., 1886). Zinc Oxide, Calomel, Tannic Acid, and Starch, equal parts.

Zinci Permanganas.

Notes of its use in 70 cases of urethritis; 10 cured, in 54 discharge greatly diminished; absence of irritation marked, 1 grain in 8 ounces of water used.—B.M.J. i./89,1458.

'**Solubes**' contain $\frac{1}{4}$ grain each to produce 2 ounces of solution for injection.

Is used as an astringent in form of douche.

'**Collapsubes,**' with catheter attachment, of Zinc Permanganate in soft Paraffin; strength 1 in 2000 are prepared for urethral medication in chronic gonorrhœa.

Zinci Sulphas, Zinc Sulphate (*Off.*).

Dose.—1 to 3 gr. (0·065 to 0·2 Gm.) tonic, 10 to 30 gr. (0·65 to 2 Gm.) emetic.

Is soluble 1 in 0·65 water at 59·5° F.—P.J. i./02, 552.

Collyrium Adstringens Luteum, P. Austr. Ammonium Chloride 5, Zinc Sulphate $12\frac{1}{2}$, Distilled Water 2,000; dissolve and add Camphor 4, dissolved in Diluted Spirit (Sp. Gr. 0·895) 200. Then add Saffron 1. Digest 24 hours and filter.

As an astringent lotion is largely used for conjunctivitis.

Lotio Rubra, U.C.H. Zinc Sulphate 2 grains, Compound Tincture of Lavender 12 minims, Water to 1 ounce.

Solubes' Zinci Sulphatis are prepared, coloured red, equivalent to 2 and 10 ounces respectively of the above lotion.

Solubes' Zinci Sulphatis et Aluminis contain 10 grains of each, coloured for dissolving in a pint, more or less as required of warm water.

Collapsubes' (*v.p.*217) **of Zinc Sulphate** 1 grain in 1 ounce of gelatin basis are prepared for gleet and gonorrhœa.

Lotio Sulphatum.

Zinc Sulphate 30 to 40 grains, Alum 30 to 40 grains, Ferrous Sulphate 20 grains, Copper Sulphate 2 grains, Water 8 ounces. For gleet.—B.M.J. i./89,1458.

Ophthalmic Discs contain $\frac{1}{250}$ grain **Zinc Sulphate,** and $\frac{1}{250}$ grain each **Zinc Sulphate and Opium,** respectively.

Points of Zinc Sulphate are moulded for intraterine medication. **Points** of equal parts **Zinc Sulphate and Alum,** and of **Copper Sulphate** are also made.

Antiseptin is said to consist of Zinc Sulphate 85, Boric Acid 10, Zinc Iodide $2\frac{1}{2}$, Thymol $2\frac{1}{2}$. Used in 1 o 2 per cent. solution, 10 per cent. Ointment, and as a usting powder with talc.—P.J. ii./00,587.

Zinci Sulphis, Zinc Sulphite.

A minutely crystalline white powder, soluble about in 600 of water. A non-irritant antiseptic; allows rmation of healthy tissue.

Gauze impregnated with Zinc Sulphite has been ed.—B.M.J.ii./90,1063; P.J.1890,469; Pr. xlvi.461.

LIST OF DRUGS OF SECONDARY IMPORTANCE.

Acidum Carbonicum.—Carbon Dioxide, Carbonic Anhydride. The gas inhaled for relief of leucocythæmia, trial recommended.—B.M.J. ii./98,235. Carbonic Snow on cotton wool as a cold application.—B.M.J. ii./98,433. For cardiac dyspnœa and pain of angina.—B.M.J. ii./99,1178.

Acidum cetraricum.—*Syn. Cetrarin. Dose*, 2 to 4 grains. A white micro-crystalline powder, obtained from Iceland moss (*Cetraria islandica*); taste bitter, soluble in alcohol, slightly so in water and ether. Recommended as a bitter tonic and laxative in constipation of chlorosis and anæmia.

Aconitum ferox.—Root, called *Bish* or *Bikh* in India, Nepaul Aconite by druggists. Contains Pseud-Aconitine (see p.49), virulently poisonous. It comes from the Himalayas, probably mixed with the root of other species of aconite, and is in bolder roots than the aconite root imported from Germany. Therapeutically, its action resembles that of *A. napellus*, but is more diuretic and less antipyretic and diaphoretic. Internally, has relieved many cases of neuralgia and acute gout, and forms a valuable liniment for chilblains. Tincture, 1 in 8 of 90 per cent. alcohol. *Dose*, 1 minim hourly. Botanical descriptions of poisonous and non-poisonous Indian Aconites.—P.J. i./03,63.

Aconitum Fischeri.—Produces Japanese Aconite Root, of which much has at times been imported. It is very pungent, and yields Jap-aconitine (P.J. 1894,813). This gives (by hydrolysis) Acetic Acid and Jap-benzaconine, and finally Benzoic Acid and Jap-aconine.—P.J. ii. 99,512. *A. japonicum*, with yellowish white flowers, has been identified as a variety of *A. Lycoctonum*. In the root of the European variety of the latter two alkaloids have been found, Lycaconitine and Myoctonine, both of which possess poisonous properties like Curare.

Aconitum heterophyllum.—Root, known as *Atis* or *Atees* in India, is neither poisonous nor antipyretic, but is tonic, and possibly aphrodisiac in action. It contains a large quantity of starch. *Dose*, in powder, 5 to 20 grains; of tincture, 1 in 8 of 90 per cent. alcohol, 10 to 60 minims.

Adonis vernalis.—Contains a hygroscopic glucoside Adonidin, which resembles Digitalis in its action, but is said not to be cumulative. *Dose*, in powder, 3 to 6 grains; of infusion 1 in 40, 4 drachms; of Adonidin, ¼ to ½ grain daily. Is a cardiac tonic and diuretic.—B.M.J. i./86,709. Does not rival digitalis.—L. i./86,223. Use in dilated rather than hypertrophied heart.—Pr. xxxix. 128; Y.B. 1888,13. Successful use; disappearance of throbbing headache, perspiration, and dyspnœa; sedative, but little diuretic, raises arterial tension. L. ii./88,1012. Relieves præcordial pain in mitral and aortic regurgitation; urine increased and coloured yellow.—L. i./89,596; ii./91,505; B.M.J. ii./92,1156. Use with bromides for epilepsy.—L. ii./94,1298; P.J. ii./95,391; B.M.J.E. i./98,44. Adonidin is rapid and certain in action.

Æsculus Hippocastanum.—Horse-Chestnut. Tincture of Seeds 1 in 10 proof spirit for painful hæmorrhoids. *Dose.*—10 minims night and morning. Also emmenagogue.—P.J. ii./96,79. A liquid extract has been used, painted on or rubbed in in rheumatism and neuralgia. Pills sold under the name of **Antiarthrin** are said to contain an extract of the plant and salicin for use in rheumatism.

Æthol.—Cetyl-Alcohol in crystals from Spermaceti. Is recommended for dermatological use, rubbed on the skin it becomes unctuous; is mixed with boric acid, under the name of *Borsyl.*—P.J. ii./99,344b; ii./00,586.

Agar-Agar.—Japanese Isinglass. Is in membrane-like strips, consisting of the dried jelly of *Gelidium corneum*, a sea-weed. Another variety comes from Borneo. 1 in boiling water 200, forms on cooling, a transparent jelly, suitable for invalids; it is used in preparation of culture media for bacteria (*v.p* 625); also for finishing calicoes, silks, &c.

Agaricus Albus. — *Syn.* Polyporus Officinalis, Boletus Laricis, Fungus Laricis, Larch or Purging Agaric. *Dose*, 10 to 30 grains. Light, spongy pieces. Large doses purgative, small ones astringent for night sweats, diarrhœa, and to diminish bronchial secretion. Tincture 1 in 10 of 60 per cent. alcohol. *Dose.*—20 to 60 minims. Must be distinguished from the fly agaric Amanita Muscaria. **Acidum Agaricum,** Agaricin P.G. Laricic Acid. *Dose.*—⅙ to ½ grain is given to restrain the sweating of phthisis.

Aletris Farinosa, B.P.C.—Star Grass. From the rhizome of this are prepared a Fluid Extract with diluted alcohol, U.S., *dose*, 5 to 15 minims, and a Cordial or Elixir, *dose* of ½ to 1 drachm, are used as uterine tonics.

Alginoid Iron.—*Dose*, 2 to 15 grains. Alginic Acid from seaweed is combined with iron, forming an insoluble brown powder containing about 11 per cent. of iron. Does not constipate; is given for anæmia. Pills and pellets are prepared.

Allium.—Garlic. U.S. The bulb of *Allium sativum.* *Dose* ½ to 2 drachms. Useful in cases of dilated bronchi with fetid expectoration; expectoration lessened and fetor disappeared.—Clinical Journal, Jan. 24, 31, 1894. Juice.—*Dose*, 10 to 30 minims. Extract = inspissated juice. *Dose*, 4 to 10 grains. Pill contains 4 grains extract. Syrupus Allii Aceticus, U.S. 1 in 5. *Dose*, 1 to 4 drachms. In pulmonary phthisis it diminishes cough and often expectoration ceases, lessens night-sweats, improves appetite, weight is gained and sleep becomes regular under its continued use.—B.M.J.E. i./00,104; L. ii./94,957; L. i./04,90,481,1026.

Alstonia constricta, I.C.Add.—Bark used in Australia as a febrifuge. *Dose*, in powder, 5 grains. A crystalline alkaloid, Alstonine or Chlorogenine, has been isolated from it. Tincture, 1 in 8 Alcohol 60 per cent. *Dose*, ½ to 1 drachm. Should be less, 5 to 20 minims. Influenza well treated by Tincture, 10 minim doses.—L. i./01,399; P.J. i./01,362, *vide* also p. xviii. Three other alkaloids exist in it. A mild diaphoretic. The dose in I. C. Add. said to be too large—twice too much. When prescribing the tincture that of A. Constricta should be specified.—L. i./03,375.

Alstonia scholaris, I.C. Add.—Dita Bark, from India and the Philippine Islands. Contains a crystalline alkaloid, Ditaine, and the milky juice of the tree forms a substance resembling gutta percha. Tincture, 1 in 8 Alcohol 60 per cent. *Dose*, ½ to 1 drachm.—P.J. i./01,362, *vide* also p.xviii.

Andrographis, I.C.Add, *v.pp*.xviii,532.

Anacardium occidentale.—Cashew Nut. The pericarp of this contains a vesicating oily liquid, which consists of 10 per cent. of Cardol (to which the vesicating properties are due, and 90 per cent. of Anacardic Acid. The oil has been used in leprosy, ringworm, ulcers, corns, and internally as a vermifuge. Tincture, 1 in 10 S.V.R. *Dose*, 2 to 10 minims. The Marking Nut, from *A. Officinarum*, possesses similar properties.

Anhalonium Lewinii.—Mescal Buttons, the fruit of this is eaten by the Mexican Indians to produce intoxication accompanied by visions. Effects due to alkaloids, Anhalonine and Mescaline. Mescaline is the principle to which the peculiar visual hallucinations are due.—Pr. lxi.71. Effects of Mescal.—P.J. ii./99,357.

Anhalonium Williamsii contains an alkaloid Pellotine, which has been used as an hypnotic in dose of ⅓ to ⅔ grain, internally and injected.—B.M.J.E. ii./96,67; P.J. i./96,502. Pellotine Hydrochloride as a hypnotic.—P.J. i./99,583.

Anthemis nobilis.—Chamomile Flowers *(Off.)*. In addition to official Extract, Infusion, and Oil, a Tincture, 2 of single fresh flowers in Alcohol (90 per cent.) 3, and Water 1, is used for summer diarrhœa of children. *Dose*, 3 to 10 minims.

Anthoxanthum odoratum.—Sweet Vernal Grass. Flowers develop odour of coumarin on drying. Tincture, 1 of fresh-flowering herb in 10 of 40 O.P. spirit (making allowance for the moisture the plant contains). *Dose*, 2 to 6 minims, internally and diluted as a lotion for hay fever.

Antiaris toxicaria.—Upas tree of Java; milky juice of tree contains a principle, Antiarin, recommended in the treatment of heart disease. Kiliani's research on the juice.—P.J. ii./96,137; Y.B. 1898,10; P.J.i./03,385.

Apis Mellifica.—The Honey Bee. A Tincture—*Dose* 1 minim hourly, is prepared, which is said to have decided effect in relieving urticaria.—Leonard & Christy's Dict. Mat. Med. p. 43.

Arbutin.—A crystallized glucoside obtained from the leaves of *Arctostaphylos Uva-ursi*, Bearberry, and other ericaceous plants. It is given for chronic cystitis and vesical catarrh, in dose of 5 to 15 grains with sugar; is not poisonous. Liquid extract of Uva Ursi leaves, *dose*, 20 to 40 minims, is preferable, the Infusion (*Off.*) has 1 ounce to 1 pint of boiling water.

Areca, Semen Arecæ, P.G. iv. Betel Nut. B. P. Add. 1874.—From *Areca Catechu*. *Dose*, in powder, 1 to 4 drachms. Is astringent, and is used as a vermifuge, especially for dogs; is also used as a masticatory and added to dentifrices. Contains several alkaloids, the most active of which is **Arecoline**, a liquid which forms a white crystalline **hydrobromide** P.G. iv. Its physiological action is allied to that of pelletierine and pilocarpine. Taken internally, causes vomiting and diarrhœa. —B.M.J.E. ii./90,15. Is sialogogue and diaphoretic.—B.M.J.E.

ii./95,99. Arecoline resembles physostigmine as a myotic. 1 per cent. solution suitable.—P.J.ii./96,39; M.C. Nov./97, 151; Y.B. 1898,368; B.M.J. i./99,82. **Tenaline**, a liquid specialty, used in veterinary practice; is an efficient vermifuge. *Dose.*—1 minim for each pound of the weight of the dog. —B.M.J.E. i./98,35.

Arenaria rubra.—A solid extract and a liquid extract of the entire herb have been used in chronic and acute cystitis, when there is dysuria.—P. J.ii./01,307.

Asclepias cornuti (A. SYRIACA).—Is diaphoretic and liuretic. Tincture, 1 in 10. *Dose*, 5 to 40 minims.

Asclepias incarnata.—White Indian Hemp rhizome. s a speedy, potent, and reliable diuretic.—Pr. xxiii.141. 'incture, 1 in 10. *Dose*, 5 to 40 minims.

Asclepias tuberosa.—Pleurisy Root. Is expectorant and iuretic. Tincture, 1 in 10. *Dose*, 5 to 40 minims.

Baptisin. *Dose*, 1 to 5 grains. An extractive from Baptisia inctoria, in small doses a laxative, in large doses a cathartic. 'incture 1 in 10 of Alcohol 60 per cent. *Dose.*—5 to 30 ninims.

Beberinæ Sulphas. *Dose*, 1 to 10 grains; if in a mixture little Aromatic Sulphuric Acid covers its bitterness. It s in the form of scales, and is prepared from the bark of *ectandra Rodiæi*, Bebeeru bark. It is freely soluble in ater. **Beberine Hydrochloride** is in reddish brown ales. Use, antipyretic and tonic as Quinine; valuable for enorrhagia.

Blatta (Periplaneta) orientalis.—Cockroach. Is an old ussian remedy for dropsy. *Dose*, 2 to 8 grains, in powder or tincture, strength 1 in 16, and in West Indies is used as an tispasmodic—*e.g.*, for whooping-cough.

Blepharis Capensis.—This South African plant is recomnded as a remedy for anthrax. Tincture, 1 in 8 of 90 per nt. Alcohol. *Dose.*—16 minims (1 Cc.) every three hours; dually lessened, as the drug is an active one.—P.J. i./98,149. commended in snake bites and insect bites, also for toothhe.—P.J. ii./00,63.

oldoa fragrans (*Peumus Boldus*).—The leaves, from Chili l Bolivia, resemble those of Sweet Gale (*Myrica Gale*), but more aromatic. Used in dyspepsia, liver affections, rheutism, and as a diuretic for atony of the bladder. Boldin, a coside, has hypnotic properties, and said also to have local esthetic properties like cocaine. Tincture of Boldo, 1 in 5 0 per cent. alcohol. *Dose*, 10 to 20 minims.—B.M.J. ii./85, 4; i./88,918.

rucine. *Dose*, $\frac{1}{12}$ to $\frac{1}{2}$ grain. An alkaloid from *Strychnos x Vomica* seeds—small white acicular crystals, with bitter e. Very soluble in Alcohol and Chloroform. Its salts are ble in water. Like Morphine it gives a red colour with ic acid (*see* Water Analysis), which Strychnine should It is said to possess only $\frac{1}{12}$ of the physiological power Strychnine. For epilepsy the Hydrochloride has been n as liquor, same strength as Liquor Strychninæ, in 10 im doses increased until $\frac{1}{2}$ a grain is reached.

assia Beareana. A native Ceylon remedy for fever, kwater fever, and malaria.—L. i./02,282; i./03,190, 796.

A liquid extract, 1 in 1 is prepared. *Dose*, 30 to 60 minims, well diluted with water.

Cereus (Cactus). Grandiflorus (*Night-blooming Cereus*).—Used in asthenic conditions of heart, and dropsy.—B.M.J. i./90,70. Liquid Extract (imported), 1=1. *Dose*, 1 to 10 minims. Tincture, fresh flowers and young stems 1, alcohol 4. *Dose*, 2 to 10, increased to 30, minims. A cardiac tonic, free from cumulative or narcotic action, most valuable in functional disorders, palpitation in dyspepsia and Graves' disease, and the milder forms of angina. Cardiac weakness following excessive alcohol or morphine taking, well adapted for its use.—Pr. xlvii. 141,223,266; L. ii./91,1274; B.M.J.E. ii./91,157; M.C. Nov. 1891,110; P.J. 1891,347. Possesses at most some slight diuretic action.—Pr. liii.161; P.J. 1894,253,416. Cactina Pillets, a specialty recommended as a cardiac tonic, are said to contain $\frac{1}{100}$ grain cactina, obtained from *Cactus Mexicana*.

Botanical description, cardiac action doubtful.—P.J. ii./97,174,539,574.

Chekan.—The leaves of *Myrtus Chekan*. Are aromatic and expectorant; are used in chronic coughs and bronchitis. *Dose*, of fluid extract, ½ to 3 drachms.

Chelidonium Majus.—GREATER CELANDINE.—The yellow milky juice is an old remedy for warts and opacities of the cornea. The freshly-expressed juice preserved by ½ per cent. by volume of chloroform has been much used as a remedy for cancer, given internally in dose of 10 to 60 minims, and in some cases with striking results. A fluid extract (*Dose*, 10 to 30 minims) from the dried plant is used for parenchymatous injection into diseased tissue, and, diluted, as a lotion. An alkaloid, Chelidonine, has been isolated, forming a Hydrochloride and a Sulphate in minute yellowish granular crystals; have been used as morphine substitutes in cancer. *Dose*, 3 grains twice a day.—P.J. ii./01,317,351.

Collinsonia Canadensis.—The root of this, commonly known as stone-root or knob-root in America, has been employed in gravel and other urinary affections. Is an antispasmodic in flatulent, infantile, and biliary colic, and locally in lax conditions of the uvula, pharynx, and vocal cords. Tincture, 1 in 10 of alcohol 60 per cent. *Dose*, ½ to 2 drachms. Liquid Extract, 1 in 1. *Dose*, 15 minims to 1 drachm. Suppositories containing 20 to 30 grains of the powder are also used. Has also been employed in cancer of stomach and cystitis.

Coronilla varia.—An aqueous extract of the leaves and flowering tops is used as a remedy in many cardiac affections. It possesses the great advantage over digitalis and strophanthus that it does not derange the digestive functions. *Dose of extract* is 1½ grains (0·1 Gm.) three or four times daily.—P.J. ii./98,661. The active principle Coronilline lessens frequency of the pulse, kills by cardiac paralysis.—B.M.J.E. ii./98 55. Tincture 1 in 8, by percolation. *Dose*, 30 to 60 minims.

Corydalis cava or **C. tuberosa.**—HOLLOW-ROOTED FUMITORY.—The root, known as *Radix Aristolochiæ*, possesses antiperiodic properties, and has been given as an emmenagogue and anthelmintic, as well as in syphilitic, scrofulous, and cutaneous affections, in dose of 10 to 30 grains. The bases Corydaline, Bulbocapnine, Corycavine, Corybulbine, Corytuberine, and Corydine have been obtained from the root. Berichte, 25,2411; P.J. i./97,465, *ex Proc. Chem. Soc.*, 179, 101; Archiv, 1898,236. Five other alkaloids have since been isolated by Gadamer.—C. and D. ii./01,632.

Cypripedin.—*Dose*, 1 to 3 grains. The dried extract of the *Cypripedium pubescens*, Ladies' Slipper.' In nervous affections, hysteria, hypochondriasis and epilepsy.

Cytisine.—*Syn.* Ulexine is an alkaloid obtained from *Cytisus Laburnum.* It is also present in *Ulex europæus*—the common furze. Cytisine Hydrobromide, a freely soluble salt, *dose*, $\frac{1}{20}$ to $\frac{1}{2}$ grain, has diuretic properties. It benumbs the tongue.

Drosera rotundifolia.—The leaves of Sundew. Have been recommended for chronic bronchitis, asthma, whooping-cough, and to ease the cough of phthisis. Tincture, 1 in 10 of proof spirit. *Dose*, 5 to 10 minims.

Erigeron Canadense.—Fleabane. The oil distilled from this herb is official in U.S. *Dose*, 5 to 30 minims. Capsules contain 5 minims, and a Liquid Extract of the leaves is prepared, *dose*, 30 to 60 minims. The plant has astringent and hæmostatic properties, especially in uterine, urinary and nephritic affections, dysuria, strangury, also used in hæmoptysis.

Eugenol.—*Syn.* Eugenic Acid.—A colourless oily liquid, darkening on exposure, obtained as an oxidation product of oil of cloves. It has a strong clove odour, and is a powerful antiseptic and antiputrescent. Has been employed by dentists. Caused reduced sensibility of mucous membrane, but not complete anæsthesia. Useful with fool fat in eczema.—Th. Gaz. May 1889,344. Acetamide of eugenol; crystalline, non-caustic and antiseptic; recommended as a local anæsthetic.—L. ii./92,1350.

Eumenol is said to be the fluid extract of a Chinese root, Tang-kui, is given to check profuse menstruation; contains a volatile oil. *Dose*, one drachm three times a day, before the periods.—B.M.J. E. ii./01,68.

Galium Aparine.—The plant Cleavers or Goose Grass. Is acid, astringent, and diuretic. Has been used in dropsy, jaundice, scrofulous scaly eruptions, epilepsy, and obesity; and, externally, a poultice of the fresh plant beaten into a pulp and the juice have been applied to promote healthy granulation in cancerous sores, and as a styptic for bleeding wounds. Succus Galii, *dose*, 1 to 2 drachms; and Extractum Galii, 5 to 20 grains.—B.M.J. i./83,1173; ii./83,14. For psoriasis.—B.M.J. i./86, 588.

Geranium maculatum, U.S.—Cranesbill root, is a powerful astringent; contains about 16 per cent. of tannin; used in diarrhœa, and locally in relaxed conditions of the mucous membranes. Geranin, a dried extract, is given in dose of 1 to 5 grains. Fluid Extract, U.S., *Dose*, 15 to 60 minims.

Glaucium Luteum.—Yellow-horned or Sea Poppy. 1 drachm of Liquid Extract in glycosuria gave good results. Hæmoglobin and red corpuscles increased considerably.—

P.J. i./99,91; i./00,222. The alkaloids Glaucine, Protopine, and Chelerythrine are present.—Y.B.P. 1902,86.

Glycogen.—A body allied to starch. *Dose*, 1½ to 2 grains (0·1 to 0·15 Gm.) It occurs in the liver, blood, horseflesh, etc. It is changed on death into glucose, maltose, and isomaltose. It is said to have a remarkable effect in improving nutrition.—L. ii./03,345.

Gokhru.—The prickly fruit of Pedalium Murex. A remedy for nocturnal seminal emissions, incontinence of urine and impotence. Is rich in mucilage. An infusion 1 in 20 of boiling water (stand 2 hours). A pint is a daily dose. Should be freshly made.

Hæmol and Hæmogallol.—These two products of the reduction of the colouring matter of the blood are used for chlorosis, and are said to be more easily converted into blood colouring matter than other ferruginous preparations. The former, a blackish powder, is obtained by the action of zinc, and the latter, a reddish brown powder, by means of pyrogallol. *Dose* of each, 2 to 8 grains in cachet, thrice daily. **Arsen-Hæmol.**—Hæmol with 1 per cent. of arsenic; tonic and hæmatinic in anæmia. *Dose*, 1½ grains thrice daily in pills, gradually increased to 10 pills daily. **Bromo-Hæmol.** *Dose*, 30 grains twice or thrice daily in cachets. Combines tonic and sedative action.

Halviva.—KREAT-HALVIVA. *Dose*, 5 to 30 minims. A liquid sold as a nostrum, prepared from Kreat, or Kariyat, an Indian plant. This name is in India applied to two plants, *Ophelia Chirata* and *Andrographis paniculata*. Has been recommended as a tonic and substitute for quinine, in malaria and debility.—B.M.J. i./91,520,669,1004; P.J. 1891, 837,1120; C. and D. i./92,614; L. ii./00,327. Possesses antiseptic and antipyretic properties.

Heliotropin.—*Syn.* Piperonal, a Methylene derivative of Protocatechuic Aldehyde, when pure is in shining white flaky crystals with Coumarin odour, slightly soluble in water, freely in alcohol, much used in perfumery.

Helonias dioica.—False Unicorn Root. Is used in colic and in atony of the generative organs; also employed as an abortifacient.

Hydrocotyle asiatica.—This umbelliferous herb is used in India for specific skin diseases, scaly eruptions, and ozæna, as an alterative and diuretic, in 4 to 10 grain doses internally; is added to lard as an ointment, also to poultices, and used as snuff in ozæna. Contains 15 per cent. of a volatile oil named Vellarine.

Hydroxylamine is formed by the action of nascent hydrogen on nitric acid. It is only known in aqueous solution, odourless and colourless. Its strong reducing properties suggested its use in dermatology instead of chrysarobin. It is a powerful poison to low organic forms. Does not stain the skin. Large doses produce hæmaturia on account of destroying the red blood-corpuscles. The HYDROCHLORIDE is in large odourless and colourless hygroscopic crystals, with an acid taste and reaction, freely soluble in water. Solution 1 in 1,000 of equal parts of glycerin and alcohol, successful in lupus, ringworm, and parasitic sycosis. Strongly irritant. Has a similar action to amyl nitrite in lowering blood-pressure.—Pr. xlvii.259. Useful in psoriasis and tinea tonsurans; better applied as ointment with lanolin.—B.M.J. i./90,1207; Th. Gaz. 1890,744. The first few applications (by friction) do not produce smarting, but later ones may. Not much advantage over pyrogallol and chrysarobin in psoriasis.—B.M.J. i./03, 545.

Inula Helenium.—Elecampane. Root contains Inulin allied to Starch, and Helenin, a stearoptene, in white acicular crystals with faint odour and aromatic taste, insoluble in water, but freely so in alcohol. Is antiseptic, used in ozæna, keeps off insects, and internally for phthisis, malarial fevers, infantile and catarrhal diarrhœa; checks bronchial secretion.

Juglandin.—An extractive prepared from the inner bark of the root of *Juglans cinerea*, the butter-nut; is an hepatic stimulant and cathartic. *Dose*, 2 to 5 grains in pill. **Spiritus Nucis Juglandis**, distilled from *Juglans regia*, the walnut, is an antispasmodic and for checking sickness of pregnancy. *Dose*, 1 to 4 drachms.

Kava-Kava, I. C. Add.—Root of *Piper methysticum*, from the Polynesian Islands. Is used by natives as a sialogogue and to make a fermented drink. Contains an essential oil, two resins, and about 1 per cent. of a neutral crystalline principle, Kavalin or Methysticin, allied to Piperin. Is a bitter tonic, with agreeable taste, stimulates the nervous system, and is diuretic. Has been found useful for gonorrhœa, gout, and cystitis. Extract, hydro-alcohoiic. *Dose*, 5 to 10 grains. Liquid Extract, 1 in 1, of alcohols 90 and 45 per cent. *Dose*, 30 to 60 minims. Pill = 3 grains extract. *Dose*, 1 to 3 or 4. Infusion, 1 in 320. *Dose*, ½ pint. Though more palatable than, is not equal to copaiba or santal oil. Is a local anæsthetic to tongue and eye.

Koromiko.—These herbs, *Veronica salicifolia* and *V. parviflora*, imported from New Zealand, are used there and in China as a remedy for chronic dysentery and diarrhœa. Tincture, 1 in 5 of proof spirit. *Dose*, ½ to 1 drachm.

Lachnanthes tinctoria.—Spirit Weed, Red Root. A tincture = 1 in 10 of proof spirit of this United States plant; is used to check the cough in phthisis. *Dose*, 1 to 10 minims. B.M.J. ii./95,1470; L.ii./01,1604. References to Alabone's treatment by lachnanthes. — B.M J.ii./01,747,912,1124,1868; i./02,101,113. Dr. Latham's report on.—B.M.J. ii/02,146; L.ii./02, 72,88.

Lactose.—**Saccharum Lactis** (*Off.*). Milk Sugar. *Dose, ad lib.* Used for weakly children. Is said to be a useful addition to Magnesia as a laxative, it increases the solubility of the latter by combination, and masks the taste. Is prepared from the whey of milk.

Leptandrin.—*Dose*, ¼ to 2 grains. A resinoid powder obtained from Culvers Root, *Leptandra Virginica*. It promotes the flow of bile without irritating the bowels; useful in dyspepsia. Acts well with podophyllin in cases of sick headache.

Lycoperdon giganteum.—Puff Ball. This forms a soft and comfortable surgical dressing. The dusty powder is a powerful hæmostatic.—Whitla.

Maidis Stigmata. – *Syn.* Corn Silk. The thread-like stigmata of nearly ripe Maize fruit. Are demulcent and diuretic. Used in acute and chronic affections of the kidneys and bladder, *e.g.*, catarrh of, cystitis, nocturnal incontinence of urine, and cardiac dropsy. Useful in renal catarrh and colic.—M.R. 1885,103. Fluid extract, *dose*, 1 drachm ; of extract, 20 grains.—L. ii./85,799 ; ii./87,605.

Maidis Ustilago.—Maize Ergot, Corn Ergot. Is used in parturition in place of ergot. Is said to increase the force without increasing the duration of uterine contractions. *Dose*, 15 to 60 grains, Fluid Extract, ½ to 2 drachms.—Pr. xl.215 ; Th. Gaz. Dec. 1887,844 ; B.J.M.E. ii./93,7.

Menispermin.—*Dose*, 1 to 5 grains. The powdered extractive from species of *Menispermum*. A tonic laxative, diuretic, stimulant ; useful in indigestion.

Menyanthes trifoliata.—Bogbean Leaves. Are bitter tonic, emmenagogue, antiscorbutic, vermifuge and febrifuge ; large doses are purgative and emetic ; contain Menyanthin, a glucoside. Infusion 1 in 20. *Dose*, 2 to 6 ounces, taken hot, early in the morning daily, useful for functional amenorrhœa.—L. i./85,132,235. Liquid Extract with Liquorice, 1 in 2. *Dose*, ½ ounce in a cup of hot water daily as the infusion.

Monsonia ovata or **biflora.**—A South African plant used as a native remedy for dysentery. Tincture, 1 in 8, Alcohol (90 per cent.). *Dose*, 1 to 4 drachms every 3 or 4 hours.—L. i./97,368,433 ; Y.B. 1898,99,426,465 ; P.J. i./97,162, 450 ; M.C. April,97,63. *Monsonia Burkei* (or *biflora*) preferred, and *Pelargonium tuberosa* also recommended for dysentery.—L. ii./98,127 ; ii./99,1826. Useful in anthrax.—P.J. i./01,106.

Moschus.—(*Off.*) Musk. *Dose*, 5 to 10 grains (0·32 to 0·65 Gm.). The dried secretion from the preputial follicles of the musk deer, *Moschus Moschiferus*. That known as Grain Musk is Official. A useful nerve stimulant in cases of exhaustion in fevers and blood poisoning. (West London Med. Jl. ix, 20.) Is effective in obstinate hiccough and infantile convulsions.

Myricin.—*Dose*, 2 to 5 grains. The powdered extract of *Myrica Cerifera*. An astringent and stimulant, and in large doses, emetic. For diarrhœa and jaundice.

Myrtillus (*Vaccinium Myrtillus*).—Bilberry or whortleberry. An extract or jam has been employed with good results in dysentery, and has been painted on the tongue in stomatitis. It is said to be of great value in typhoid, rendering the intestine aseptic. Suppositories containing 1 Gm. of the extract are prepared. An enema is also used. A liquid extract is prepared. *Dose*, 2 to 3 tablespoonfuls.—B.M.J. i./03,306,402,485,972 ; P.J.i./01,702 ; C. & D.i./03,273.

Myrtol. — A constituent of myrtle oil ; has been recommended in putrid affections of lungs and air passages. Expectoration lessened, but no effect on bacilli. *Dose*, 5 to 15 minims on sugar. **Capsules** contain 2 and 5 minims. — B.M.J. i./89,336 ; P.J. 1889,782 ; Y.B. 1890,307 ; Arch. 1900, 436.

Naftalan—A German specialty. An ointment prepared by dissolving 2½ to 4 per cent. of anhydrous soap in purified petroleum naphtha. Used as an application for arthritis, rheumatism and eczema. Melts at 70°C.—C. & D. 1898,250; Therap. 1899,63,181. Useful in bedsores.—P.J. ii./00,206.

Nectrianin.—An extract from cultures of *Nectria Ditissima*, an organism producing cancerous excrescences on forest and fruit trees. Has analgesic properties, and has been injected in cases of cancer—3 Cc. daily. Is supplied for hypodermic injection in boxes of 5 ampullæ, and for external application in the form of a paste.—P.J. i./01,754.

Pelargonium flabellifolium. Root from Natal possesses great astringency. *Dose*. 5 to 20 grains, found useful in dysentery. Tablets Compound, Pelargonii 5 gr., Opii ¼ gr., Ipecac. ¼ gr., Bismuth. Salicylat. 2½ gr., *dose*, 1 or 2.—P.J. i./01,540.

Phloridzin.—*Syn*. Phlorizin, a glucoside from the bark of stem and root of the apple, pear, plum, and cherry, is in minute pinkish-white crystals, sparingly soluble in water, readily so in alcohol and ether, and possesses the peculiar property of inducing artificial diabetes (glycosuria) in animals to which it is administered (*v.p.*183). A valuable mild tonic, specially suitable for children; a substitute for quinine when latter is not tolerated. *Dose*, Tonic, 5 grains, antiperiodic, 15 grains.

Phytolaccin.—*Dose*, 1 to 5 grains. Extractive from *Phytolacca Decandra*. Has emetic, cathartic and alterative properties. Has been used in rheumatism and syphilitic affections. A tincture 1 in 10 alcohol 45 per cent. *Dose*, 3 to 10 minims. Locally applied for painful mammæ.

Pichi.—Leaves and twigs of *Fabiana imbricata*; useful in gravel and some kidney diseases. Liquid Extract. *Dose*, 10 to 60 minims. Has given good results in gonorrhœa and cystitis.

Pinus Canadensis.—The hemlock spruce of the U.S.A. *Syn*. Abies Canadensis. A fluid extract is recommended for use as an astringent in leucorrhœa.—L. ii./86,888; and given internally as an astringent for diarrhœa, hæmoptysis, and night sweats. *Dose*.—10 to 60 minims.

Pollantin. A Hay Fever specific. Professor Dunbar and Sir Felix Simon have called attention to an anti-serum obtained by treating a horse with irritant toxins obtained from the pollen of grasses.—B.M.J. i./03,713,743,1235,1279, 1291. It is not a panacea.—B.M.J. ii./03,123,220. A few drops instilled into the eye or nostrils, when an attack of hay fever comes on, checks the suffusion of the conjunctiva, and the sneezing and general discomfort.—L. ii./03,1462.

Quassin. Obtained from quassia, in rectangular lamellar crystals, soluble about 1 in 400 of water, soluble also in acid and caustic alkaline solutions. Increases secretion of salivary glands and kidneys, and stimulates digestion, *dose*, $\frac{1}{30}$ to $\frac{1}{3}$ grain.

Quillaia saponaria (*Off.*). *Syn*. Panama Bark (Soap bark). Contains quillaic acid and sapotoxin, closely allied to saponin. Has a sweetish but acrid after-taste, and possesses emulsifying properties, causing frothing in water in which it has been macerated. Soap-bark has been used as an expectorant in bronchitis, contra-indicated in inflammation of the intestines or stomach, or ulcerated condition of the mucous membrane. Is used for emulsifying tar preparations, and in Emulsio Chloroformi. Tincture (*Off.*), 1 in 20 of alcohol (60 per cent.). *Dose*, 30 to 60 minims. The powder has very marked sternutatory properties.

Rubus Chamæmorus.—Cloudberry, Norwegian blackberry, marsh raspberry, or dwarf mulberry. The leaves of this are diuretic, useful in nephritis, cirrhosis of liver, cardiac affections, cancer of stomach, chloro-anæmia with œdema, hysterical epilepsy and palpitation of the heart. Infusion, 1 in 12, *dose*, ½ ounce; fluid extract, *dose*, ½ to 1 drachm. Fruit is antiscorbutic and used for hæmoptysis.—Th. Gaz. 1890,54.

Sagapenum.—*Dose*, 10 to 30 grains. A gum-resin, rarely met with; is in yellowish-red pieces. Has a taste somewhat resembling asafœtida, and properties similar to this and galbanum, for use in amenhorrœa and hysteria.

Salix nigra.—The bark of this, the black or pussy willow, is used as a sexual sedative, tonic and astringent, and given for gonorrhœa and spermatorrhœa. Liquid extract, 1 in 1. *Dose*, ¼ to 1 drachm. Relieves ovarian pain and nocturnal emissions. —B.M.J. ii./87,237; L. i./88,869.

Sassafras Radix (*Off.*). The oil (*Oleum Sassafras, U.S.*), consisting principally of Safrole, benzene derivative, is a useful pediculicide, it dislodges their nits; it should be applied with a stiff brush but not touch the skin, yet, if so, a little bland oil allays the irritation it causes. Black Sassafras, *v.p.* xxviii. **Safrole**, now obtained from camphor oil, is used for scenting soaps and as an anodyne in subacute rheumatism. *Dose*, 20 to 30 minims.

Saw Palmetto.—A palm growing in America. Possesses sedative, tonic and diuretic properties. Is largely used in urethritis, gonorrhœa, dysmenorrhœa, impotence, cystitis. A liquid extract 1=1. *Dose*, ½ to 2 drachms. A solid extract is also prepared. *Dose*, 3 to 5 grs. in pill or tablet. Is also frequently combined with Santal in a miscible form, *e.g.*, Sanmetto.

Scopola Carniolica (*Scopolina atropoides*).—The root of this, an Austrian plant, has been imported as a substitute for belladonna. It contains the alkaloid hyoscyamine in comparatively large quantities, and almost free from admixture with other mydriatic alkaloids. Given internally, it is said to cause less dryness of the throat than belladonna, and is probably more nearly allied to hyoscyamus in its action. Liniment, Ointment, and Plaster, corresponding to those of Belladonna are prepared, also Extract, *dose*, ⅛ to ½ grain; Liquid Extract, *dose*, 1 to 5 minims, and Tincture, *dose*, 5 to 30 minims.—P.J. 1889,461,464,466,468,471,500; L. ii./89, 1297; B.M.J. i./90,92. **Scovolamine**, mydriatic alkaloid, has been obtained from this root, *v.pp.* 103, 303. It may be used in solution one-fifth the strength of atropine solution, and does not cause dryness of throat.—P.J. 1894 (Dec.),545; C. and D. i./95,291. Scopolamine hydrobromide preferred to atropine in ophthalmic practice.—L. ii./93,1503. *Dose*, $\frac{1}{200}$ to $\frac{1}{100}$ grain. The powdered drug Scopola in 5 to 7 to grain doses has been given in paralysis agitans to suppress the tremor.

Scopola japonica, P. Jap.—The root of this, known in commerce as Japanese Belladonna, yields an alkaloid, Scopoline, which is a mydriatic, and produces as much dilatation as atropine in half the time, and effects last longer.—L. ii./84,558; B.M.J. i./86,1113. This Scopoline proved to be a mixture of atropine, hyoscine (?) and hyoscyamine.—P.J. 1889,461.

Senecio. Ragwort. The herbs *Senecio Jacobœa* and *S. aureus* are of ancient use as emmenagogues, and have been successfully employed in amenorrhœa and dysmenorrhœa, especially when depending on chill. Liquid Extract, 1 = 1 of herb. *Dose*, 20 to 60 minims. Tincture, 1 in 10 of proof spirit. *Dose*, 1 to 2 drachms. Senecin, an extractive principle. *Dose*, 2 to 5 grains in pill.—B.M.J. i./94,679; Pr. liii.52; M.P.C. i./94,431. Does not cause abortion.—M.C. Sept. 97, 412. Two alkaloids—Senecionine and Senecine—are contained in the underground parts of many species of *Senecio*.—P.J. i./95,1195; ii./95,535. *S. aureus* as a hæmostatic. — P.J. i./98,471.

Simaba Cedron. Tincture of the seeds used hypodermically for malaria with good results.—Med. Times xxix. No. 10.

Simaruba Officinalis.—*Syn.* MOUNTAIN DAMSON. *Dose*, 15 to 30 grains. Infusion 15 grains to 1 ounce in boiling water (infuse 15 minutes). *Dose*, 1 ounce. Has bitter taste and astringent properties, and is a useful drug in dysentery.

Simulo.—Fruit of *Capparis coriacea*, from Peru. Its powder, 45 grammes in 500 grammes of sweet wine, of which a wineglassful was taken every night and morning, cured a case (Dr. Larrea, who narrates it) of epilepsy after he had 14 fits, preceded by a distinct aura. He has used it much in nervous diseases, hysteria, and epilepsy. — L. i./85,722; B.M.J. i./85,1184; P.J. 1885,890. Cases of epilepsy improved by its use.—L. i./88,617. For chorea.—Th. Gaz. 1890,692.

Sorbus Aucuparia.—The Mountain Ash. A liquid extract is prepared 1 - 1. *Dose*, 10 to 30 minims. A useful mild aperient; also has diuretic and emetic properties.

Soya Hispida.—*Syn.* DOLICHOS SOJA.—The seeds of the soy bean are recommended as food made into a kind of bread for diabetic patients. They contain only 6·4 per cent. of starch, 36·7 per cent. of proteid matter, and 17 per cent. of fat. Slightly purgative at first, but toleration soon established.—P.J. 1889,118; Th. Gaz. Jan. 1889,44; Pr. 1.321.

Symphytum officinale.—The Comfrey plant and root boiled as a poultice for sarcomatous or cancerous tumours; one such cured.—L. i./99,810. For hæmoptysis and kidney disease with blood in the urine, as a decoction or syrup.—L. i./99,939. General uses, from an old herbal. -L. i/99,1068. Root pulped was used to stiffen bandages for fractures.

Taxus Baccata.—The Yew. Taxine, an alkaloid, is extracted. White crystals soluble in alcohol and ether. *Dose*, $\frac{1}{100}$ to $\frac{1}{80}$ grain. Is said to have an action on circulation.—Proc. Chem. Soc, Vol. 18, No. 253.

Terebinthina Canadensis (*Off.*).—The balsam obtained from *Abies balsamea*, known as Canada Balsam, is used for microscopic purposes as a mounting medium. Is a constituent of Collodium Flexile. (*Off.*) It has a refractive index approximating that of microscopic glass, and "sets" in a non-crystalline transparent condition. In preparing for use it has to be gently heated in an open dish for a week or more until a small quantity removed becomes brittle when placed on a cold slab. Canada Balsam 1 part by weight in Xylol, in turpentine, in benzol, and in chloroform, each 1 by measure, are prepared for microscopic use. The first mentioned is chiefly employed and is frequently designated 'Xylol-Balsam.'

Thapsia.—The root of *Thapsia garganica*, an umbelliferous plant grown in Algeria (allied to the Silphion of the ancients); when exhausted with alcohol yields a resin which is employed in the French Codex to form a rubefacient plaster, Emplastrum Thapsiæ; Fr. Sparadrap de Thapsia, Emplâtre Révulsif de Thapsia.

Thuja Occidentalis.—Arbor Vitæ. A tincture is prepared, of the dried young tops in 10 of 70 per cent. alcohol. *Dose*, 2 to 5 minims (0·12 to 0·3 Cc.). Thuja has an irritating action on the skin, and has been employed to remove warts and fungoid granulations from ulcers; internally for amenorrhœa, pulmonary catarrh, and worms.

Tulipa.—An extract of the bulb under the name of Chielin, in the form of a cream and soap, is advocated in eczema. The soap is suggested also for seborrhœa, acne vulgaris, and similar affections. It is soaked in water, is applied to the skin, and allowed to remain on during the night.—B.M.J.E., ii/02, 80; M.A, 1904, 15.

Tonga.—A specialty for neuralgia. Dose, 1 to 2 drachms. A liquid prepared from *Epipremnum mirabile* and *Premna Taitensis*. **Succus Ari**, prepared from *Arum maculatum*. *Dose.*—1 drachm. Relieved a case of neuralgia in which Tonga was equally successful.

Ulmus fulva.—The SLIPPERY ELM grows largely in America (*Ulmus campestris* is common in Europe). The inner bark of fibrous texture has a highly mucilaginous taste; in powder is much used as a demulcent. It should be free from starch. Ten grains shaken with an ounce of water should form a thick jelly-like fawn coloured mass. *Decoction*, 1 in 8. A mucilage 1 in 16⅔ is official in U.S.

Vanadium.—Vanadic Acid and Sodium Meta-Vanadate. Of these the last has been used in chlorosis, phthisis, and rheumatism as tonics and stomachic antiseptics.—P.J. i./98, 603. Sodium Meta-Vanadate. *Dose*, $\frac{1}{32}$ grain (0·002 Gm.) or ½ the quantity injected hypodermically. Is soluble in water, but decomposes in the presence of organic matter. Preparation of, and other directions *re* pharmacology of Vanadates.—P.J. ii./99, 1493; i./00, 46; B.M.J.E. ii./99, 91. **Sodium Vanadate** improves appetite and nutrition.—B. M. J. E. ii./01, 88. **Vanadine.**—Under this name a liquid preparation of French manufacture, said to contain a vanadium salt and sodium chloride. Is used for gastralgia and dyspepsia.

Vanillin.—*Syn.* VANILLIC ACID. Occurs in white acicular crystals, having a strong odour if obtained from vanilla; but is also obtained as a derivative of coniferine, a glucoside obtained from coniferous woods. Soluble in alcohol, ether, and oils, sparingly so in water. On lower animals is a convulsive agent causing epileptiform movements, but on man, 10 or 15 grammes given without noxious results. Use suggested in atonic dyspepsia as an excito-motor stimulant. For employment as test, *v.p.*615.

Vinca major.—Great Periwinkle Herb. Is astringent, and has been used for menorrhagia. Infusion, 1 in 10. *Dose*, a wineglassful frequently. Liquid extract, 1 to 2 drachms.

Viola Odorata.—Has been used in cancer both internally and externally. A **liquid extract** is prepared (2=1 of fresh leaves). *Dose.*—Internally, 1 teaspoonful. May also be rubbed in locally. A fomentation of the leaves is also said to have given relief. The various species of Viola have similar properties. A poisonous alkaloid, Violin, is said to have been found in them, allied to Emetin, exists in the plant as malate. Schmidt gives Violaquercetin a glucoside as constituent. The herbaceous parts of the plant are mucilaginous, emolient, and slightly laxative. Salicylic Acid has, in addition, been found in various species. The root acts (in *dose* of 30 to 60 grains) as an emetic and cathartic. A decoction of the green leaves has been used.—C. and D. ii./01,839,843.

Viola tricolor, U.S.—Flowering plant of Wild Pansy. Is supposed to contain a little Violin (see above), resembling Emetin in action. Is used externally as an ointment, and a poultice. *Dose*, 10 to 60 grains in infusion. An infusion in milk 1 in 10, very useful in acne vulgaris. The plant contains Salicylic Acid.

Viscinum Aucuparium Depuratum.—Birdlime has been suggested for use instead of indiarubber for plasters.—B.M.J.E.—ii./03,91.

Viscum album.—Mistletoe. The berries are said to be emetic and purgative. The plant contains Viscin, a kind of birdlime. Has been used for epilepsy and hysteria.—L. i./04, 111. *Dose*, in powder, 10 to 60 grains. Is said to be an ingredient in Elepizone, *v.p.* 177. Recommended for chorea.—Westcott.

Yerba Santa (*Eriodictyon glutinosum* or *E. californicum*)—Leaves are aromatic and sweetish, often agglutinated together; they are stimulant to mucous membranes of the bronchial tubes. Used for bronchitis, phthisis, and other catarrhal affections. Fluid extract, 10 to 40 minims. Is sold combined with extract of malt, as Malto-Yerbine. *Dose*, 1 to 4 drachms. Composition and preparations.—P.J. 1890,540; L. i./98,1114.

Yohimbine Hydrochloride.—The salt of an alkaloid obtained from Yohimbehe or Yumbehoa bark, is a reputed aphrodisiac. One per cent. solution, *dose*, 5 to 15 minims. Tablets contain $\frac{1}{12}$ grain. *Dose*, 1 thrice daily; may be increased to five. It has erotic powers.—B.M.J.E. i./01,103.

If the internal administration not successful, injections of 7 to 15 minims ($\frac{1}{2}$ to 1 Cc.) of a 2 per cent. solution may be tried.—Deutsch. Med. Wochenschrift, 1902, No. 22,402.

A few drops of a solution $\frac{1}{2}$ to 1 per cent. strength act as an anæsthetic when applied to the cornea. There is no mydriasis, and the anæsthesia lasts for an hour.

ANTITOXINS,

VACCINES

AND

ANTITOXIC SERUMS.

THE discovery of the medicinal powers of the serum of animals which have been rendered immune to certain diseases opened up a new source of therapeutic agents for use in diseases set up by bacterial intoxication.

Behring showed that toxins produced by the diphtheria bacillus when injected into an animal effected an immunity, and that the serum of this animal induced immunity to the disease when injected into another, and that it could be employed for treating the disease in the human body.

The antitoxins contained in this animal blood serum probably combine chemically with the toxins circulating in the blood and tissues of the sick person, they by so doing neutralise the power of the toxins, and thus the human body recuperates.

It is assumed by Ehrlich that the **Toxin** molecule possesses two groupings, known respectively as the Haptophore and the Toxophore—the former is capable of combining with the cells of the body and with the Antitoxin, and the other is responsible for toxic effect. The Toxophore will combine with a **Toxophile** grouping in the cell, if present. He imagines the Haptophore group of the Toxin first of all to become attached to the Haptophile group of the cell, and if the cells do not possess side chains or groupings exactly corresponding to the Haptophore groups the Toxophore groupings cannot combine, and there is no injury to the cell. Diagrams in Hewlett's "Serum Therapy" illustrate the idea.

Ehrlich considers in his "**Side Chain**" **theory** that the protoplasmic molecule is in the nature of a chemical molecule, possessing a central radical, and a number of lateral groups or side chains, each of which according to its character is capable of combining with certain bodies, *e.g.*, food stuffs, toxins, and every blood or cell poison which exists. These side chains are also called Receptors.

There appear to be two forms of bacterial disease, for injecting an animal with diphtheria or tetanus toxin certain of the groupings are combined, and more of the same Receptors are produced to replace those used up. On injecting more Toxin, still more groupings arise; indeed there is a tendency to overcompensate the defect, until finally so many of these appear that they are thrown off into the blood, and these constitute the Antitoxins. These are free to combine with Toxins, preventing the action of the same on the cell. The Toxins of diphtheria and tetanus are extra-cellular "soluble" toxins excreted by the bacteria, found in the fluids in which they are cultivated. But in the case of typhoid, plague, &c., the toxins are apparently inherent in the bacterial cell; in this case there are two substances involved—first, an immunising body existing in the serum *after* treatment with the bacterium; the other, the "complement" which is present in normal serum in small quantity, but which rapidly decomposes after withdrawing the blood from the animal.

This accounts for the fact that antityphoid serum can only neutralise a small lethal dose of the typhoid bacillus, and possesses little curative effect—the complement being absent, bacteriolysis, *i.e.*, destruction of the bacilli cannot proceed.

The absence of success with the antityphoid and anticholera sera in man may be due to the fact that the "complement" in man is not met by an appropriate immune body in these sera. It has been suggested to employ in these diseases an injection of fresh serum at the time of administering the antitoxin so as to increase the amount of the complement.

For the theories of immunity, *see* B.M.J. i./03,653.

Ehrlich's Side Chain theory, however, has been attacked by two Danish workers, who question the existence of the haptophore and toxophore groupings, they conclude that only a single form of poison exists, and that the multiplicity of poisons in which Ehrlich believes is due to the fact that the two bodies, the toxin and antitoxin, are chemical bodies of weak affinity.—M.A. 1904,41.

Polyvalent Sera are now in general use. This name indicates that a mixture of several strains of the bacterium have been employed for inoculation, so as to ensure the best all-round and uniform results.

In the **preparation of Antiserum** the toxin is injected subcutaneously into the animal, *e.g.*, the horse, with strict aseptic precautions. Some reaction, rise in temperature and malaise occur. Further injections are made at intervals. The quantity injected is gradually increased, and subsequently the injections may be intravenous. The blood is removed from the animal by the aid of a large sterilised canula, from the jugular vein, 6 to 12 litres may be collected in sterile flasks. The clot is allowed to form by standing 24 to 48 hours, and the serum is decanted into sterile bottles after the addition, by some manufacturers, of 0·3 per cent. of Trikresol or 0·2 per cent. of Phenol.

Liquid air is used for freezing the bacteria and rendering them capable of disintegration to obtain the intra-cellular toxins for experimental purposes.—B.M.J. i./03,681; P.J. ii./03,921.

CLASSIFICATION.

The following is an analysis and classification of antitoxins, serums and vaccines :—

A. Vaccines.

1. Cultivations.

- *a.* Containing pathogenetic micro-organisms, with toxins; such as Anthrax, one form of Cancer Vaccine, Cholera Vaccine, Coley's Fluid, Haffkine's Plague Vaccine, Tuberculin and T.R. of Koch, Typhoid Vaccine of Wright.
- *b.* Containing toxins only; such as one form of Cancer remedy, Diphtheria Toxin, Mallein, Tetanus Toxin, and Tuberculin Koch (?)

2.

- *a.* Tissues of animals suffering from an infective disease; such as Malignant Œdema, and Rabies.
- *b.* Fluids of animals suffering from an infective disease; such as Vaccine Lymph, and Glycerinated Calf Lymph.

*B.** "**Anti" Serums** = Anti-Diphtheritic and Anti-Tetanic Serums.

1. Antitoxic; such as Anti-Pneumococcic, Anti-Venene against serpents' venom, and Diphtheritic and Tetanus Antitoxins. These neutralise the toxins.
2. Anti-bacterial; these act directly upon bacteria; such are Cancer Anti-bacterial Serum, Cholera Anti-bacterial Serum, Anti-Leprosy Serum, Anti-Tubercular Serum, Anti-Rabic Serum, Anti-Streptococcic Serum, Anti-Typhoid Serum, and Yersin's Plague Serum.

C. Animal tissue extracts = Organo-therapy.

Notwithstanding our acceptance of the above (Sims Woodhead's) classification, we find it to be more convenient for purposes of reference to arrange these modes of treatment according to the diseases in alphabetical order.

NOTE OF CAUTION.

The constitution, mode of preparation, and standards of strength of these serums, lymphs, and antitoxins of animal origin are still very indefinite, except in the case of Anti-Diphtheritic and Anti-Tetanic preparations. The modes of manufacture are still in process of development, and the results cannot be estimated by chemical analysis any more than by physical processes; they can only be ascertained and compared by experiments on animals or on man. Under these circumstances, the authors disclaim any intention of recommending the employment of these serums, &c., and state that physicians making use of them must at present be guided by the makers' guarantee as to strength, purity and method of administration.

Anthrax.

Attempts have been made in France, Italy, Germany, and also in Japan, to prepare an antitoxin for the cure of this fatal form of animal poisoning; experiments made at the Pasteur Institute are noted.—B.M.J.E. i./96, 23.

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* When an "Anti" body is formed in connection with any toxins and bacteria, these substances may always be used as immunising bodies.

This vaccine is prepared by cultivating the bacillus under conditions unfavourable to its growth, *e.g.*, in the presence of an antiseptic, or at a high temperature, by which the toxicity is greatly reduced and a temporary illness is produced on inoculating.

It has also been found that cultures of B. pyocyaneus will protect against anthrax.

Cancer, Coley's Fluid; See Sarcoma, *v.p.*550.

Cholera.

This disease is marked by the presence of the spirillum choleræ.

The method of treating cholera by the injection of attenuated choleraic poison has been tried in Spain, Germany, and in India, with various results; but no curative anticholera serum has yet been prepared.

On the other hand, the prophylactic vaccines of Haffkine have been used with great success in India.

Haffkine prepares two forms of his vaccine (1) weak, (2) strong, by employing a growth of the spirillum the virulence of which has been increased by growth in the peritoneal cavity of guinea-pigs. The dose of these preparations is 1 Cc. The second being injected 3 to 5 days after the first (the weak) one.

Haffkine has made 16,000 protective inoculations in India.—L. i./94,167. Now 25,000. L. i./94,1513.

Haffkine's summary of the results of anti-choleraic inoculations for cholera in India during 1893-4.—B.M.J. i./95,219; L. ii./95,999.

Haffkine's lecture on the treatment of cholera by antitoxin methods.—L. ii./95,1555; B.M.J. ii./95,735, 1541. Another discourse.—L. i./99,1694.

Statistics of the results of inoculations.—L. ii./96,171.

Editorial notes on cholera antitoxin treatment.—L. ii./96,395,631,1246,1266.

Lord Lister's address on preventive inoculation.—B.M.J. ii./95,1609.

Diphtheria Antitoxin; Serum Antidiphthericum, P.G.iv.

Preparation.

This remedy for diphtheria consists of the serum of horses, previously rendered incapable of taking the disease, or of a principle—antitoxin—separated from it. These horses are immunised by the injection of the toxin of diphtheria, which is produced by the culture of the bacillus diphtheriae in broth in ordinary ½ litre Erlenmeyer-shaped flasks—a surface growth is important—the liquid becoming sufficiently active in 10 to 14 days, the most virulent strain obtainable must be used: this broth culture is then filtered through a Chamberland filter and the horses are injected with the clear fluid commencing with ½ to 1 Cc. The animals must initially be carefully examined for absence of glanders and tuberculosis. Repeated injections during 4 to 6 months of increasing quantities of toxin up to as much as ½ or 1 litre render the serum of a high antitoxic quality; the horse does not show any sign of illness during this process. The efficacy of the remedy is tested by injecting guinea-pigs with a dose of the serum *pari passu* with an injection of diphtheritic poison. When the horse's serum is found to have reached the stage at which this combined injection leads to no symptoms of diphtheria, it is considered to have attained the required potency. The horse is bled about 10 days after the last injection, and the serum prepared for use as a remedy, and as a prophylactic.

The horse from which this perfected serum is obtained is then found to be itself safe from possible diphtheritic infection, and if this perfected serum be added to a fluid containing diphtheritic toxins they become harmless.

This serum combats the disease in the human subject.

Dose.—

In a case of suspected diphtheria it is well to inject the antitoxin *at once* without waiting for the result of the bacteriological diagnosis; no harm can result from so doing.—Hewlett.

The dose of diphtheria antitoxin at present is considered to be at least 1,500 *units*, 2,000 *units may safely be injected whether in the case of a child or adult, frequently much more is injected. For prophylactic purposes* 500 *or* 1,000 *units may be administered. The immunity caused is claimed to last for* 3 *weeks.*

It is much safer to give too many units than too few. The injection should be made as early as possible in the case and repeated once or twice. It would appear to be harmless, as many as 35,000 units have been given in a single dose and 82,000 units in three doses intravenously.—P.J. ii./03,794.

In conducting the injection the syringe and needle should be thoroughly sterilised by boiling. Special antitoxin syringes are made for the purpose. The skin must be carefully cleansed at the point of the injection with Ether Soap solution. Injections are preferably made in the flank or between the scapulæ under the strictest aseptic precautions. No dressing is needed after the injection.

Units of Immunity.

The Ehrlich-Behring Unit refers to the toxin **neutralising power** of serum, not to the volume of the liquid. A normal serum is prepared for comparative purposes; 1 Cc. of this contains 1 unit of immunity, and 0·1 Cc. of it neutralises 1 Cc. of normal standard toxin.

The strength of sera are ascertained by physiological tests on guinea-pigs weighing, as near as possible, 250 Gm., using mixtures of different quantities of the serum, and a lethal test dose of standardised toxin. The neutralising point is indicated by the animal's death being prevented on the fourth day.

An International Commission was appointed in September, 1903, at Brussels, to consider the most satisfactory method of estimating the activity of sera.

Preservation.

The serum retains its activity for 10 months if kept in a cool and dark place.

In addition to the liquid sera, **Dried Serum** in scales is manufactured by evaporation at a temperature not exceeding 40° C., or by means of Sulphuric Acid in vacuo. This is more suitable for export. The scales are dissolved in sterilised water for injection.

There are various preparations on the market; attention should be paid to the directions given with each brand.

The Lister Institute of Preventive Medicine now supplies diphtheria antitoxin dry in tubes of 4,000 units, and fluid in vials of 2,000 units. 200 units are a preventive dose; for cases of moderate severity a dose of 1,500 units is injected, while for the worst cases 3,000 units or more may be used. The serum should be kept in a dark, cool place, in an ice safe if possible.

By injecting direct into the circulation intravenously brilliant results have been obtained, the toxin circulating n the blood is apparently much more effectually and rapidly neutralised.—P.J. ii./03,795; L. ii./02,1685.

Of **complications** following injection—if abscesses and septic infection occur the serum may have been contaminated, yet hæmorrhage occurs occasionally. Albuminuria is less frequent under antitoxin than formerly. As higher potencies are now used, and the quantity of serum injected is therefore less, rashes, pain and swelling are also less frequently reported.—Hewlett.

References.

The earliest report of the use of the antitoxin serum is found in the Deut. Med. Woch. of April 27, 1893; this s noted in B.M.J.E. i./93,83. Behring and Kossel were the investigators; they give notes of 30 cases of diphtheria, so treated, of which 24 recovered, or 80 per cent.

First English reported case by Eastes, 5 Cc. of Aronson's preparation in a child of 10 years, with recovery.—B.M.J. ii./94,125.

The second case, by Goodhart, age 3 years, one dose of 12 and one of 8 minims of Aronson's antitoxin were used; recovery.— B.M.J. ii./94,180.

Lecture by Sims Woodhead at College of Physicians and Surgeons. Klein's process and his criticism of that of Behring.—B.M.J. ii./94,1393; L. ii./94,1409,1415.

Account of a visit to the Paris Institute and report on the cases of Roux and Martin.—L. ii./94,1173,1235.

Met. Asy. Board Rep.—L. i./96,941; B.M.J. i./96,855.

Recommended use for diphtheritic ophthalmia.—L. i./96,712; B.M.J.E ii./96,35,83; L. i./97,1606.

Report on the relative strengths of the various diphtheria antitoxins by the Lancet Commission.—L. ii./96,182,271.

Report on antitoxin as used in the hospitals of the Met. Asylums Board.—B.M.J. i./97,1376.

British Med. Assoc. Annual Meeting. Preliminary Report on Behring's serum in treatment of diseases not due to the Klebs-Löffler bacilli.—B.M.J. ii./97,1709.

A summary of the complications following the use of Antitoxin.—Pr. lx.371; L. i./99,891.

A tabulation of the results of the Antitoxin treatment of laryngeal diphtheria.—M.C. March 1898,445.

Results in London are less favourable than in Paris and Berlin.—L. ii./98,1457.

Appeal for its early use in private practice.—L. ii./98, 1545,1732.

Antitoxin treatment has diminished the death-rate, but the proportion of cases of paralysis is greater.—L. ii./99,561.

Sudden death may follow injections.–B.M.J.i./02,1025.

Antitoxin serum is also efficacious when given by the mouth or rectum.—L. i./01,400,971; B.M.J. i./01,1142; L. i./04,123.

Anti-diphtheritic serum in Italy has recently become contaminated with the toxins of tetanus and has caused fatal results.—B.M.J. i./01,228,293,417; ii./01,1622.

Saline solution injected as an adjuvant to antitoxin. —L. ii./01,1131.

Recent favourable reports.—L. i./01,1270.

Good results from prophylactic use.—L. i./01,247.

St. Louis, U.S.A., thirteen deaths from tetanus after diphtheria antitoxin.—L. i./02,996.

Dysentery.

Shiga in Japan has prepared an anti-dysenteric serum from the horse and claims to have reduced the mortality of epidemic dysentery.—B.M.J.E. ii./01,36.

Preliminary experiments on the production of an antitoxin to cure dysentery.—B.M.J. ii./03,1456.

Mallein.—A growth of the glanders bacillus in glycerinated broth.

This vaccine toxin is used as a test for the presence of glanders in sick horses, and German physicians have suggested that it may be used as a diagnostic agent in man. In a few cases it has been injected for the cure of chronic glanders in man, and has produced great improvement. The Mallein of the Lister Inst. Prev. Medicine is injected in dose of 1 Cc. for diagnostic use; complete reaction comprises a rise of 2·7° F., and an extensive hot and painful local swelling. It is supplied in 3 Cc. bottles.

Plague, The.

For the treatment of plague there are:—1. Yersin's Curative Serum, also used as a prophylactic. 2. Haffkine's Prophylactic Anti-plague Vaccine. 3. Lustig's Anti-plague Vaccine. The vaccines are killed cultures of bacillus pestis.

Yersin Curative Serum of the Lister Institute is sent out in 20 Cc. bottles. The Yersin Serum may be prepared by cultivation of a virulent growth of the bacillus obtained from several epidemics. Special flat-shaped bottles are employed, and an emulsion of the growth on physiological salt solution is injected intravenously into the horse in gradually increasing amount—the first few doses having the bacilli killed by heat. Bleeding takes place a fortnight after the last dose. The serum is finally tested for efficacy.

Haffkine's Prophylactic Anti-plague Vaccine of the Lister Institute is put up in cartons of 21 Cc. The adult dose is 3 Cc., and a child's dose is 1 Cc. For details of manufacture consult Report of Indian Plague Commission referred to in L. i./02,615.

Lustig's Anti-plague Vaccine is sold in 21 Cc. packages: this quantity is sufficient for three administrations intravenously. This is prepared by making an emulsion in 1 per cent. Soda Solution of an agar growth of the organism, filtering, precipitating the nucleo-proteids and redissolving. This preparation constitutes the vaccine. **Serum** is also prepared by injecting horses with the solution. Note on use in India, result favourable.—L. ii./03,1520.

Bombay, the Yersin treatment for the Plague is less successful than it proved to be in China and appears to have failed.—L. i./97,976,981; L. ii./97,225,1547.

Report of the Indian Plague Commission; the Anti-plague vaccine is still recommended, but its effect is not certain. Its use lessens the death-rate, and also the proportion of the people attacked. The protection afforded is not immediate, and does not certainly last many weeks.—B.M.J. i./00,455,461; L. i./00,567,724.

Lecture by Calmette on the use of plague serum.—L. ii./00,1366; B.M.J. ii./00,1400.

Methods of making plague antitoxic and preventive serums.—B.M.J. ii./00,1241.

Haffkine's prophylactic, mode of use.—B.M.J. ii./00, 1243.

Lustig on curative and protective inoculations.—B.M.J. i./01,206; ii./00,311,1236.

A special Plague number of the B.M.J., Oct. 27, 1900.

Use of Yersin Serum at Réunion. Good results.—B.M.J. i./01,1567. Leader on.—B.M.J. i./02,1492.

Review of 30,000 cases of preventive (Haffkine) inoculations against the plague in the Punjaub, India; a case mortality of 16·9 against 45·2 of uninoculated persons.—L. ii./03,1646,1647.

Pneumonia.

An Anti-pneumococcic Serum is recommended by Pane, of Naples. Report from Guy's Hospital; it protects from pneumococci obtained from two different sources.—L. i./99,954.

Further experiments on animals. – B.M.J. ii./99,1247.

Here again the Serum should be a "polyvalent" one and is produced by horse inoculation of a broth culture, during a prolonged period.

A dose of 20 to 30 Cc. may be administered hypodermically twice daily. The serum gave best results when recently prepared. Acute pneumonia has also been treated with success by injections of Diphtheria Antitoxin.

Rabies Antitoxin, for Hydrophobia.

Pasteur, of Paris, founded the system of treating rabies by the injection of an emulsion of the cord, believed to contain the poison, no bacilli being yet found. The rabies poison having a special affinity to the spinal cord, dogs were inoculated with poison obtained from sections of the spinal cord at different stages of treatment. In the end an immunity was set up in the animals; an anti-rabic virus was obtained and injected into patients with hydrophobia; it was also used as a prophylactic injected into persons bitten by mad dogs who had not developed hydrophobia. Many successful cases were reported, but grave doubts have been thrown upon the treatment, and it has even been asserted that hydrophobia has been caused by this method.

The mortality under Pasteur treatment in Paris is said to be 3 per 1,000 in place of the original rabic death-rate of 200 per 1,000.

Report of the Pasteur Institute, Paris, for 1897; 1,521 cases treated, 8 deaths.—B.M.J. i./98,1305.

From St. Petersburg, a mortality of only 0·6 per cent. among 318 cases.—B.M.J. i./00,109.

Results in the U.S.A.—B.M.J. i./02,1295.

Sarcoma and Malignant Tumours.

Coley's Fluid.

Coley uses a combined injection of the toxins of *treptococcus erysipelatosus* and *Bacillus prodigiosus.* ix cases of sarcoma either cured or much relieved, and cases of carcinoma without a death, are described in 'rans. Amer. Surg. Assoc. vol. xii. 1894,183. Keen (*ibid.* 07) in 7 cases of sarcoma found no arrest of growth. Villard (*ibid.* 213) suggests that the toxin of erysipelas night be found to destroy the bacilli of tubercle. Twenty-our recent cases by Coley, the toxin is injected into the umour, with retarding influence.—N.Y. Med. Record, an. 1895,65,87; Pr. liv. 377,379.

The principle of this method of treatment is the fact hat malignant tumours frequently decrease after an ttack of erysipelas.

It is prepared by cultivating the *streptococcus* from a atal case of erysipelas in bouillon for ten days. *B. proligiosus* is then added and the two are grown together or ten days. The culture is then killed at 60° C.

The Lister Institute of Preventive Medicine now supplies Coley's fluid in phials of 2 Cc. *Dose.*—Half a ninim at first, injected near the tumour.

Note on the use of Coley's fluid for cases of inoperable ancer.—L. i/98,354.

Favourable results of injections of Coley's fluid for a ibro-sarcomatous tumour.—B.M.J. i./98,948.

Cancerous tumours were lessened in size by use of ntitoxins obtained from the streptococcus of erysipelas. —M.C. Feb.1897,373.

Resemblances between the cells of malignant growths and those of normal reproductive tissue, the transmission of cancer is in no sense an infection; the tissues of the new host are the soil in which the transplanted tissue grows.—C.D. i./04,168.

Favourable reports from Emmerich and Zimmerman of the use of erysipelas serum for malignant tumours. —B.M.J.E. ii./95,88.

Swain, essay on the toxins of streptococcus erysipelatosus and of bacillus prodigiosus.—B.M.J. ii./95,1415.

In four-fifths of cases, although no real cure was effected, yet improvement was beyond question.— B.M.J.E. ii./95,103.

Case of recurrent sarcoma treated by Coley's fluid, but not cured.—B.M.J. ii./98,226,451; B.M.J.E. ii./01,3.

Summary of results on sarcoma.—L. ii./98,888.

Cancroin is a toxin obtained by cultivation of the parasite Coccidium Sarcolytes, Adamkiewiczii. Cancroin II. is another form which is similar to Nurin. — B.M.J. ii./01,251; Otto Schmidt, of Cologne, proposes new forms of serum and antitoxin which at the time of writing are not obtainable in London.—L. ii./03,1374,1381,1404.

Septicæmia, Anti-Streptococcic Serum.

Anti-streptococcic Serum is prepared by injecting cultures of *Streptococcus* into the horse. It is an anti-bacterial serum and should be a polyvalent one.

This serum does not keep well, and should, therefore, be freshly prepared.

For the many forms of fevers due to, and associated with septicæmia a variety of preparations have been in use. Puerperal fever and the varied forms of septicæmic infection following child-birth have been treated in many instances by this serum with good results.

The organism responsible for erysipelas and allied affections is the *Streptococcus pyogenes*. This organism produces little toxin in cultivating media, hence the culture itself is employed. Initially the virulence of the organism is increased by passage through a succession of animals.

Suitable cultures are then prepared in mixtures of horse serum and broth or Aronson's special horseflesh bouillon, and the horse is gradually immunised with this culture. At the finish (the process is long and tedious), a dose of 100 to 200 Cc. is reached. The horse is bled and the serum standardised. Not more than 0·5 Cc. of serum should be necessary to neutralise 10 minimum lethal doses of the *Streptococcus* when injected simultaneously into a rabbit.

Watson Cheyne has suggested the **prophylactic** use of this serum before operations on the mouth and throat, 10 Cc. daily, three times.

The Anti-streptococcic Serum, prepared by the Lister Institute of Preventive Medicine, is supplied in a liquid state in cases of three phials, 10 Cc. in each.

It has been suggested that a few doses of 10 to 20 Cc. should be given in any septic infection. It should be realised that such infection may be due to a series of organisms which will not be attacked by one which is purely anti-streptococcic.

The value of streptococcus antitoxin for puerpera septicæmia.—L. ii./95,1106; B.M.J. ii./95,655; i./96, 1500; L. i./98,577,784.

Erysipelas recoveries.—L. i./98,502; B.M.J. ii./00, 18; i./01,575.

Laudry's palsy seems to have followed its use.—L. i./96,1033.

Use in endocarditis.—L. ii./96,1079,1264,1339; i./97,520; ii./97,92,707; i./03,720.

Puerperal fever, recoveries under serum.—B.M.J. ii./01,810; ii./03,1210.

Discussion on use in puerperal fever.—B.M.J. i./98, 559,1445.

Ulcerative endocarditis treated, recovery.—B.M.J.E. ii./98,3; L. ii./00,168. A death.—L. i./99,1558.

Recommended for use in carbuncle.—B.M.J. ii./98, 1427.

Variola treated by serum, the critical period was shortened, the toxæmia less, and there was less collapse. —B.M.J. i./99,1144.

Infective endocarditis, death after treatment by serum. —L. ii./99,1225.

Editorial résumé on recent uses.—L. ii./99,1384.

A lecture and discussion on anti-streptococcic serum. —B.M.J. ii./99,1358,1359.

Obstetricians have derived no benefit from this form of serumtherapy.—B.M.J. ii./99,967. General discussion.—B.M.J. ii./99,965,972.

Pyrexia of phthisis, use not desirable.—B.M.J. ii./00,1158.

In septic inflammation of the throat.—L. i./03,438.

Erysipelas, severe case cured.—B.M.J. i./01,1079.

Acute rheumatism daily injections of 20 Cc. into affected joints with some success.

Infective endocarditis successfully treated by rectal injections; ten doses of 10 Cc. daily.—L. i./03,1268; B.M.J. i./03,1195.

Scarlatina.—Moser has introduced at Vienna a Serum prepared by the inoculation of horses with the products of cultures of streptococci, which he had found in the blood of 60 per cent. of fatal cases of scarlatina. All children treated within three days of infection recovered.—B.M.J. ii./02,1086; M.A. 1904,36.

Is probably due to a species of streptococcus. Ordinary anti-streptococcus serum did some good, and a special American preparation has benefited a number of cases.—Montreal Med. Journal, Oct. 1902, 753.

Serpent Venom. **Anti-venene.**

In the preparation of this serum the venom is removed either from the living snake or after killing it. This venom is mostly desiccated over sulphuric acid *in vacuo* and a weighed quantity of this is dissolved in sterile water and injected into the horse. The increase in dose proceeds very gradually, the final dose appears to be about 0·6 Gm. of venom, equivalent to the entire yield of 20 average sized snakes. The serum is removed in the customary manner and standardised.

Calmette showed that the venom of all snakes is of a similar nature, and obtained his remedy by the inoculation of horses with the poison of the cobra di capello: his serum possesses a strength of 1 in 20,000; that is to say, $\frac{1}{10}$ Cc. subcutaneously injected into a hare of two kilogrammes in weight suffices to protect it from snake poison which kills a similar hare in eight hours. This method of testing has been objected to and rats are employed.—L. i./01, 1661.

Dose.—

Anti-venene is supplied in tubes of 10 Cc. This amount or as much as 40 Cc. should be injected.

The serum should be as fresh as possible.

The injection requires to be made at once, or within an hour in man; death seldom occurs from serpent poison under three hours.

A ligature must be bound above the bite if possible. The wound should be opened up and washed with Chromic Acid or Gold Chloride 1 per cent. solution.

Fraser on anti-venene and the cure of snake poisoning. —B.M.J. ii./95, 416, 1165; i./96, 957; L. i./96, 1156.

An editorial article on Calmette serum.—B.M.J. ii./96, 405. Its effects.—P.R. lxx., 576.

Successful use in India.—B.M.J. i./96, 444, 500; L. i./96, 388.

Recoveries under anti-venomous serum.—B.M.J. ii./96, 1501; P.J. ii./96, 457; B.M.J. i./97, 6; L. ii./99, 1438; B.M.J. ii./99, 1412, 1732; L. ii./01, 1135.

Serpents' bile appears to be an antidote to serpents' venom.—B.M.J. ii./97,125,295. Also to some disease toxins as of tetanus and diphtheria.—B.M.J. ii/98,627.

Calmette, his own report on the work in laboratory at Lille, and insists upon the need of suiting the dose to the size of the animal operated on.—B.M.J. i./98,1253.

A criticism on Calmette's views on the use of his serum, referring to West Australian snakes.—B.M.J. ii./98.1805.

The neutralising power of Calmette's serum.—B.M.J. i./99,781; ii./99,660.

Its value is now established.—L. ii./99,1825.

On a method of standardisation.—L. i./00,1433.

On snake poisons and antitoxins.—B.M.J. ii./03,1546.

Mode of standardising.—L. i/01,1661.

Calmette bitten by snake and treated by his serum.—L. ii./01,622; his finger cut off, however.—B.M.J. ii./01,1450.

Syphilis.

The old treatment by syphilisation originated by Auzias Turenne and supported by Boeck need not be here considered.

Recent experiments on the cure of syphilis by animal fluids have not given promising results. No specific organism has been identified.

Tetanus Antitoxin.

In the absence of anti-tetanus serum the beneficial injection of 2 to 3 per cent. phenol solution should be tried —M.A.1904,72.

Preparation.

The method of preparing this antitoxin consists in rendering animals immune to the tetanic poison by repeated inoculations with increasing quantities of the tetanus toxin. This toxin is produced by cultivating the tetanus bacillus strictly anaërobically in a 1 per cent. grape sugar bouillon. The culture is ready for use in a month. This may be weakened to commence with by the addition of Gram's Iodine solution at the time of injection. The injections are proceeded with until the serum of desired immunity power is reached. At this stage the animals are bled, the serum is collected, is concentrated and dried *in vacuo*, and the residuum (the antitoxin) is supplied in sealed tubes for use in the human subject. For preservative purposes 0·5 per cent. of Phenol is added by some manufacturers.

Dose.—

The Antitoxin must be administered without a moment's delay where there is the slightest suspicion of tetanus; no harm will result if tetanus does not occur.

20 to 30 Cc. should be given subcutaneously at the outset followed by 10 Cc. every 8 hours or so. If time has elapsed it is better to give 10 Cc. intravenously, and 20 Cc. subcutaneously, with further doses every 8 hours as before.

Potency.

The Lister Institute supplies liquid Antitoxin in 10 Cc. bottles, and dried Antitoxin in tubes of 1 Gm. = 10 Cc. liquid. The Pasteur Institute of Paris supplies the Antitoxin in the same forms.

This Antitoxin should possess a potency of at least 1,000,000 Roux units; 1 Cc. should protect 1,000,000 Gm. of guinea-pig against the minimal lethal dose of tetanus poison.—Hewlett.

The general result has been to show that in acute cases, supervening at once on an injury, the antitoxin has been useless; but that in cases where the onset is long delayed the antitoxin does exercise a controlling influence and such cases generally recover under its use.

The earliest reported case; a babe 9 days old was affected by trismus neonatorum; injected by Kitasato with serum from an immune rabbit.—Berlin. Klin. Woch., No. 7, 1891.

Gowers has estimated the mortality in traumatic tetanus at 90 per cent., and idiopathic tetanus at 50 per cent. of all cases.

Treatment of Wound.

In addition the wound, if any, should be excised or scraped out and swabbed with Gram's Iodine Solution. Amyl Nitrite in capsules is valuable for checking the dangerous spasm of the glottis and respiratory muscles.

Bromide and Chloral may be necessary and full doses of liquid are advised.

The **incubation period** of tetanus is a month, and the immunity conferred by an injection of the Antitoxin lasts three weeks, hence should be repeated.

For **veterinary use** the Lister Institute supply special instructions.

A horse injected with Tetanus Antitoxin is not rendered *permanently* immune. *Protection* is a matter of weeks or months at the outside. The dose is according to severity, injury and likelihood of infection. Injections would probably cause some malaise, and it would be inadvisable to work the horse for a day or two. (Sims-Woodhead, February, 1902).

Statistics of tetanus in England for twenty years.—B.M.J. ii./94,672.

Dry pulverised Anti-tetanus Serum as a Wound Dressing.—Is also recommended to be dusted on to wounds which may have become infected with dust, mud, &c. Tetanus may also result in new-born children owing to infection in the umbilical cord after birth; this may be prevented by dusting the powder on the part in addition to treating with antiseptic dressing.

Rheumatic tetanus cured by antitoxin.—B.M.J.E. ii./97,71. Results in puerperal cases.—L i./01,1201.

Recent successful cases.—L. ii./01,729,1266; B.M.J. ii./02,290; L. i./04,652.

Recent deaths after Serum.—L. ii./01,1040; B.M.J. ii./01,1529; i./02,654; L ii./03,457.

Intra-Cerebral Injection of the Anti-Tetanic Serum.

Anti-Tetanic Serum is also injected into the skull; intra-cerebral or sub-dural, that is, beneath the dura mater of the brain and into the spinal canal. The first experiments were made in Paris, in 1898; recovery followed in the first case.

More recently this treatment has been used in addition to the ordinary sub-cutaneous injections.—B.M.J.E. i./99,27.

Recoveries after intra-cerebral injections.—L. i./99, 1290; ii./99,89; B.M.J. i./99,10,826,1333; B.M.J.E. i./99,27. Three recoveries and 1 death.—L. i./04,642.

More recent cases.—B.M.J.E. ii./01,63; L. i./02,227.

Deaths following intra-cerebral injections.—B.M.J.E. ii./98,76; i./99,83; B.M.J. ii./99,1413; L. i./99,870; ii./00,1420.

Trypanosomiasis or Sleeping Sickness.

Some preliminary attempts have been made to immunise against this disease by means of horse serum.—Laveran.

This disease is believed to be caused by the entrance into the blood and cerebro-spinal fluid of a species trypanosoma; it is transmitted from the sick to the healthy individual by a tsetse fly. The wearing of clothes is the only reason assigned for the fact that Europeans have been thought to be immune.—L. ii./03, 542, 553, 788, 990 (staining); 1673 (cultivation); 1727 (Report of Expedition to Senegambia); P.J. ii./03,839.

Tuberculin, Old. Koch's Original

This is an amber-coloured liquid and consists of an old glycerin broth culture of the tubercle bacillus, boiled and concentrated, from which the bacilli have been removed by filtering.

Imported from Germany in bottles containing 1 and 5 Cc.

The use of Tuberculin for the treatment of human tuberculosis has much diminished. The chief purpose to which it is now put is as a diagnostic of tuberculosis in cattle, for its injection into healthy animals produces no reaction, while in tubercular beasts there is a constant rise of 1½° to 6° F. after injection. The Lister Institute of Preventive Medicine prepares tuberculin suitable for human and animal use.

Dose.— One-thousandth of a cubic centimetre, increased if desired to one-tenth or more.

As a diluent phenol solution of a strength of 0·5 per cent. is usually employed, but a stronger phenol solution may also be used. No larger quantities of the solution should be prepared than are required for a few days' use. As soon as the solution becomes turbid it is unfit for further use.

Sterile Dilutions are supplied (freshly prepared) ready for use, and may be conveniently arranged so as to have a dose in 1 Cc., or in 20 minims as desired, according to the graduation of the syringe employed.

Tuberculin, "old," was introduced by Koch in Germany, as a hypodermic injection for the cure of diseases depending on the growth of the tubercle bacillus, such as phthisis, acute miliary tuberculosis, and cutaneous lupus.

Koch questions the opinion that bovine tuberculosis is identical with human, and believes that cow's milk and meat cannot give rise to human tuberculosis. A commission has been appointed to investigate the question.—P.J. ii./01,881; B.M.J. ii./01,190; L. ii./01,187; L. ii./03,333.

V. Behring's researches demonstrate that there is a very close relationship between the human and bovine tubercle bacillus.—B.M.J. i./03,806.

Twenty calves have been inoculated with human tuberculosis, the proof of the converse is, of course, difficult. The bacilli in man and cattle may be different varieties of the same species. Discussion. — L.ii./03,333,352, 399,473,560,744,788.

Human tuberculosis is more generally the result of man to man infection.—L. ii./03,850.

Effects of Injection.

The most obvious effects produced on injection are a rapid rise of temperature, which seems to depend upon the existence of tuberculous disease for its intensity; a period of depression with chill and rigors is followed by high temperature and inflammatory fever, and subsequent defervescence. The tuberculin seems to act upon the tuberculous lesions, and even partly to destroy them—it is not definitely destructive to the tubercle bacilli—or their surroundings, and subsequently there is a risk of further symptoms from blood poisoning dependent on this destruction.

In many instances the tuberculin has appeared to cause a very serious fall in the blood pressure, leading even to a fatal issue; in others the mischief has seemed to be due to a coagulating influence on the blood corpuscles, tending to blood stasis, congestion and hæmorrhage, especially in unhealthy areas adjacent to tubercular deposits; and again tuberculin does at times show an irritant effect on the white blood-corpuscles (leucocytes), causing inflammatory swellings. In cases where these evil results have been avoided there has been observed in a considerable proportion of suitable cases, a marked improvement resulting from a series of injections of tuberculin. The most favourable results have been noticed in cases of commencing phthisis pulmonalis, and in skin affections, especially in lupus of the face, but where phthisis has been far advanced evil results have been very frequent.

A valuable diagnostic, specially for cattle, the violence of symptoms limiting its applicability in human subjects. If temperature of an animal rises rapidly to 104° F. during the first 24 hours after an injection it is certainly tuberculous.—L. i./93,448; ii./01,208.

Koch's Tuberculin as a diagnostic agent gave correct results in 99 per cent. of cases.—B.M.J.E. i /04,21.

Some employ a combined treatment with the old and new tuberculin, commencing with 0·0001 Gm. of the old with the object of ultimately giving as much 1·0 Gm. of the same.—Hewlett.

Used as a diagnostic of tuberculosis in man.—B.M.J. i./96,690; L. i./00,1703.

Koch's Tuberculin, four varieties specified.—B.M.J.E. ii./98,31.

Fourth Congress on Tuberculosis in Paris, report.—B.M.J.E. ii./98,25.

Tuberculin O.

Consists of the 'obere' or upper layer of solution of bacilli cultivated on glycerin serum which are desiccated and treated with water. Tuberculin R. is the solution of the residuum. This latter is Tuberculin "New" introduced in 1897. It is, in reality, a solution or emulsion of the bacilli: it is not boiled:—

Tuberculin R or TR, Tuberculinum Kochii, P.G.iv.

This is now principally employed. It is an opalescent liquid containing 10 milligrammes of solid substance in each Cc. It may be diluted with a 20 per cent. solution of glycerin. The dose is $\frac{1}{500}$ milligramme (? unnecessarily small) of solid substance to begin with, increased up to 20 milligrammes. Injections are generally made every second day.

This preparation is used as a treatment only, and not for diagnostic purposes.

Sterile Dilutions are prepared ready for use containing the amount of solid substance desired by the physician in a convenient quantity, *e.g.*, in 1 Cc. or in 20 minims for injection.

Cases of lupus treated with excellent results.—B.M.J. ii./97,207; L. i./98,168; B.M.J. ii./98,80.

Is not a cure, but has no special evils.—B.M.J.E. ii./97,103.

Living tubercle bacilli are found in this new Koch's tuberculin, so that extreme caution in its use is necessary.—B.M.J. ii./98,1235.

Cases of surgical tuberculosis treated with various results.—L. ii./97,704.

Good effects in nine cases of tuberculous disease, valuable in early phthisis, and for lupus.—B.M.J. ii./98,77.

Uniform improvement followed in 70 cases.—B.M.J. i./02,1389.

Koch's treatment must still be considered a great boon to the poor.—B.M.J. i./02,1389.

Phthisis, recovery of four cases out of thirteen.—L. ii./98,194.

The serum reaction of tubercle in connection with Koch's new tuberculin.—L. i./03,1299.

Some experiments on monkeys with bovine and human tuberculous material; those fed with the bovine material gave no evidence of tuberculous ulcers in the intestine, whilst every animal fed with the human had evidences of intestinal lesions.—L.ii./03,745.

Tuberculous interstitial keratitis treated by sub-conjunctival injection.—L. ii./03,403.

Marmorek has introduced a new anti-tuberculous serum and vaccine. He claims to have isolated the true toxin from cultures of the bacillus.—L. ii./03,1642; B.M.J. ii./03,483,754,1434,1621; and to have cured a case of acute miliary tuberculosis by 47 injections of serum. The dose of the preparation is from 5 to 30 Cc. —B.M.J. i./04,749; L. i./04,979.

Typhoid Fever, Anti-typhoid Inoculation.

The anti-mocrobic sera give usually disappointing results; more recently there has been developed a system of anti-typhoid Vaccine Inoculations used as a prophylactic by Wright, Haffkine, Semple and Leishmann. In the experiments of Wright, the vaccine used was a four weeks' old culture of typhoid bacilli, sterilised at a temperature of 60° C., and preserved by 1 per cent. of Lysol or Carbolic Acid. The earlier records showed that of 2,835 soldiers inoculated in India, only 27 contracted the disease, and 5 died; while of those not inoculated who numbered 4,860, 213 took the disease and 23 died. At the siege of Ladysmith, Wright reports that of 10,529 soldiers not inoculated 1,489 took the disease (14 per cent.); while of 1,705 who were inoculated, 35 or two per cent. contracted the disease. The death-rate was however the same in both cases, 1 in 4·5. The protective inoculations cause a febrile state, with headache and general aching; in some cases there is sickness and diarrhœa. The inoculated person should remain in bed for at least 36 hours; the blood is found to give Widal's reaction when tested.—L. i./01,403.

The bacilli have been disintegrated by pulverising with liquid air, and have been used to immunise apes, by which means an antitoxic serum is claimed to have been produced.—Macfadyen. B.M.J. i./03,681.

An **Anti-toxic Serum** is claimed to have been prepared by producing a soluble toxin in a special cultivating medium and injecting this into horses.—Chantemesse.

Results in Paris with same.—L. i./03,322.

The **Anti-typhoid Extract of Jez** is prepared by immunising rabbits, killing them and making a glycero-alcohol extract of the brain, spleen, &c.—B.M.J.E. i./01,51.

Promising results of anti-typhoid vaccination at Maidstone.—B.M.J. i./98,908.

Haffkine on inoculations in India.—L. i./99,1698. Discussion.—L. ii./99,41.

Wright's remarks on the introduction of typhoid inoculations into England.—L. ii./99,41.

Wright on the relation between immunisation and the effects of agglutinating substances of the infected organism.—L. ii./99,1727.

Produces resistance to infection.—B.M.J. i./00,1017. Military results.—L. i./00,150.

Protection by inoculation may last for two years.—L. i./00,1578; also B.M.J. ii./01,394.

Results at Ladysmith, Natal.—L. ii./00,95.

Note on the value of anti-typhoid prophylactic injections.—B.M.J. i./01,84.

Excellent results among the Hussars.—B.M.J. i./01,336. Results favourable in Egypt.—B.M.J. i./01,1072; L. i./01,1272. Army results.—L. ii./02,651. Preventive inoculation. Results in Richmond Asylum, Dublin.—L. ii./01,1107.

An **Anti-Colon Bacillus Serum** has also been made in an experimental manner. Suggested for use in infections in urinary organs, and prior to operation as a prophylactic; sterilised cultures of *B. prodigiosus* protect against this organism.

Vaccine, Glycerinated Calf-Lymph.

This Lymph has several advantages over that obtained even from healthy children. Vaccinia produced by the injection may be regarded as variola in a modified form. The danger of imparting infectious and other human iseases is absolutely avoided, and there is but slight sk of communicating any disease peculiar to the cow, ecause few such are transferable to man, and their resence in the calf is easily detected, even moderate care eing sufficient to exclude any calf so affected. Erysipelas s of the rarest occurrence. The place of insertion should e small, otherwise the reaction is too great. The amount f protection afforded seems to be greater than that fforded by humanised lymph. Glycerinated lymph is ecognised as the safest lymph for vaccination, and by he Vaccination Acts Amendment Act, 1898, it is enacted hat if a child has not been vaccinated when nine months ld, the public vaccinator of the district shall visit the ome of the child, and shall offer to vaccinate the child with Glycerinated Calf Lymph.

It is supplied in tubes each containing sufficient for , 3 or 8 cases, and also in vials for 30 to 40, and 60 to 0 vaccinations.

Tegmine consists of a paste containing zinc oxide, which is applied to the vaccinated spot, and then overed by sterilised wafer discs.

Precaution is necessary to ensure that glycerinated ymph is not only potent, but also free from pathogenic acteria. Investigations on calf lymph and its preservation.—L. i./98,1375,1391.

An editorial article upon Glycerinated Calf Lymph.—B.M.J. i./98,392.

Recently the addition of 1 per cent. trichlor-tertiary-butyl alcohol, which is said to kill extraneous organisms n 24 to 48 hours, has been made the subject of a atent.—P.J. ii./03,768.

Chloroform water recommended instead of glycerin; aid to kill off the extraneous bacteria in 6 hours.—L. i./03,1738.

For the storage and use of lymph it is recommended o mix lymph 50 parts, glycerin 25 parts, and water 25 arts.—Pr. lx.284.

Lecture on vaccinia, vaccine lymphs, and glycerin ction on lymph and micro-organisms.—L. i./98,1237, 303; B.M.J. i./98,1186,1245.

Reynolds, of Chicago, states that it only remains otent about 120 days.—L. ii./98,1341.

Report of a Lancet Commission on glycerinated calf lymph.—L. i./02,1621.

Tetanus after Vaccination, Report of Commission on deaths from—B.M.J. i./02,285,1102.

Tetanus after Vaccination on a lady's leg, recovery under chloral hydrate.—L. i./02,506.

Discussion on tetanic germs in vaccine lymph.—B.M.J.E. i./02,49.

A treatise, historical, bacteriological, giving the method of manufacture of calf vaccine, the glycerination of the same, the filling into tubes, and the bacteriological examination of lymph.—C.D. ii./01,629.

ANIMAL ORGANOTHERAPY.

ANIMAL GLANDS AND TISSUES AND THEIR PREPARATIONS.

Of the animal extracts introduced during the last few years, those of the supra-renal capsule, the thyroid gland, and bone marrow have established a reputation in the field of therapeutics. Many others are prepared, and their use is suggested for very various forms of disease.

Ancient Organotherapy reviewed.—Pr. lxvi.420.

Lecture on Organotherapy.—L. i./02,1089.

The prefix Opo—meaning juice—will be found given by Poehl, of St. Petersburg, to many of these animal extracts.

Bone Marrow Extract, Red.

The marrow of ox-bone and sheep's ribs has been used as a remedy for pernicious anæmia, chlorosis, scurvy, purpura, hæmophilia, debility, lymphadenoma and rickets.

Tablets, containing 1 grain of the desiccated marrow, equal to 20 grains of the substance in its natural state. Each weighs 3 grains.

Dose.—1 to 3 tablets.

Marrubin.—*Syn.* Glycerin Extract of Red Bone Marrow, **Medullary Glyceride.**

Dose.—1 to 2 drachms, increased if desired.

A thick brownish liquid, containing the full activity of the ox-bone marrow, and is recommended as a nutrient substitute for cod liver oil. Being flavoured, it is palatable. It is cheap, and has had remarkable beneficial effects on weak children. It is easily assimilated and retained, and the effects are said to be quickly evident. Particularly suited for the anæmia resulting in tuberculosis, and has been found valuable in malaria. —B.M.J. i./94,1172; L. ii./94,682; M.C. Mar. 1895, 431.

Leucocythæmia, valuable in treatment of.—B.M.J. i./96,840,956.

Local applications in skin diseases.—L. i./03,104.

Virol. Is claimed to be a preparation of bone marrow, with malt, egg, and lime. It is agreeable in flavour, and is said to possess good nutrient properties for infants.

Myelocene. *Dose.*—10 drops, or more. Is an ethereal extract of bone marrow, with a small quantity (1 per cent.) of Chloretone; it has been given internally by inunction, and poured into the ear for deafness due to disease of the middle ear.—P.J. i./02,294.

Prior to application of the Myelocene half a drachm of equal parts of warm alcohol 90 per cent. and glycerin may be employed with massage.—B.M.J. i./02,699,999; ii./02,614; L. i./04,84.

Bronchial Glands. **Glandulen.**

Is prepared from these organs of sheep.—Pr. lx.219; B.M.J.E. i./99,19.

Phthisis, trial in, no good effect.—Deut. Med. Zeit. 1897,750.

Tablets contain **0·25 Gm.** (4 grains).

Bone, Decalcified, Cancellous Tissue.

To assist in the healing of wounds and the growth of granulations this soft, spongy, porous substance has been tried; it is shaped to fit cavities or in small pieces to make up deficiencies, and in fine shavings to cover superficial ulcers. Wounds heal favourably, and the dressing is gradually absorbed. For use, the tissue is washed in 1 in 80 solution of Carbolic Acid, squeezed dry before the application. Cover with external antiseptic dressing, which need not be changed for several days.—L.ii./97,857.

Cerebrin and Myelin. *Syn.* **Brain and Spinal Cord Extracts.**

These may be tried for the relief of locomotor ataxy, chorea, epilepsy, and melancholia. Halliburton suggests that Choline is the active principle of brain and nerve substance.—Journ. Phys.1901,229.

As manufactured in England, they are prepared similarly to the Thyroid Extract (*v.p.* 575), using glycerin for extraction and 0·5 per cent. phenol solution for preservative purposes. Are preferably administered hypodermically.

Dose.—5 increased to 20 minims.

Brain Extract.

Dose.—5 to 20 minims *per os*, or hypodermically.

One minim equals three grains of sheep's brains.

Spinal Cord Extract.

Dose.—5 to 20 minims thrice daily by the mouth.

1 minim is equivalent to 1 grain of fresh spinal cord. May also be administered hypodermically.

The last two may also be employed mixed in equal volumes.

Cerebrin Tablets, 5 grains (0·32 Gm.).

Cerebrinum Poehl. *Syn.* OPOCEREBRIN is a special preparation made in the laboratory of Prof. Poehl, in powder and tablet form. This is given to quiet epileptics and check the attacks, but Sodium Bromide is to be given simultaneously, 30 to 50 grains a day.

Spinal Cord Tablets, 2½ grains (0·165 Gm.).

For chorea, recovery of a case under cerebrin.—L. ii./93,819.

Neurasthenia improved by an extract from brain of rabbit.—B.M.J. ii./93,1321.

Locomotor ataxy much improved by cerebrin.—Med. Ann. 1894,409.

Thirteen cases of tubercle and syphilis improved under extract of sheep's brain.—B.M J.E. i./94,20.

Brain extracts act as mild tonics in neurasthenia and insanity.—B.M.J. ii./00,819.

Eye.

Several proposals have been made to use extracts made from the tissues of the eye as remedial agents, by Louis Dor in 1897 and by Lagrange in 1898.

A **Retinal Extract** has been more recently tried in cases of atrophy of the retina and tobacco amaurosis.—B.M.J. ii./03,190. Is prepared of strength 1 ounce = 4 retinæ. *Dose.*—2 drachms.

Opticine is a similar preparation; results in retinitis; it is given internally.—B.M.J. ii./03,724.

Mucin.

Dose.—5 to 10 grains (0·32 to 0·65 Gm.).

This is the essential constituent of the secretions of mucous membranes, buccal, nasal, pharyngeal, &c. It is precipitated from these by alcohol and by acetic acid, The saliva produced by the submaxillary and sublingual glands contains it, but not the parotid. It may be procured from areolar or connective tissue, and from bile.

Taken internally, relieves painful digestion, gastritis and gastric ulcer. In the form of a spray containing Mucin 5 grains, Sodium Bicarbonate 5 grains, Menthol 1 grain, Lime Water ½ ounce, Distilled Water ½ ounce, has been found of value in dry catarrhs, rhinitis, &c., pharyngitis atrophicans, and where incrustations on the laryngeal lining.—L. ii./00,730; ii./01,972; i./02,961; i./03,374.

Ovaries.

Following the example of Spermin obtained from the testes, some experiments have been made with the ovaries. An extract has failed in the treatment of osteomalacia, but has proved of value in the cure of dysmenorrhœa and menorrhagia, and for climacteric ailments. Merck's Report, 1897, and P.J. ii./96,246.—B.M.J. ii./00,821.

Tablets, 5 grains (0·32 Gm.).

Chlorosis treated by ovary juice.—B.M.J.E. ii./96,43, 75,92.

Mental disease may be improved.—B.M.J. i./04,130.

Placenta.

In the middle ages and in China the placenta was used as a medicine, as an aphrodisiac, and to cure sterility.

Chorionin, a preparation of the placenta of the sheep given medicinally by M. Bouchacourt to increase the flow of milk after parturition.—L. ii./03,1179.

Placental Extract. *Dose.*—15 to 30 minims. Is made from the fresh placenta of the sheep; a little ammonium fluoride and syrup are added; good results have been observed in chronic metritis, chlorosis and anæmia; it also increases the flow of milk.—L'Obstetrique, March, 1902.

Spermin. *Syn.* ORCHIDIN, TESTICULIN.

The use of an extract from the testicles of animals for treatment of human diseases was suggested by Brown-Séquard. In the male it was asserted that injections of testicular fluid re-animated sexual power and cured impotence, especially when simply the result of senile decay.—B.M.J. ii./00,821.

Liquor Testicularis, Orchitic Fluid.

Dose.—15 minims hypodermically, or by mouth to 30 minims.

Prepared from the testes of animals (preferably guinea-pigs), by maceration with glycerin and subsequent filtration under pressure in contact with carbonic acid, by d'Arsonval's process.

Poehl finds that the active principle of testicle juice is a definite body, Spermin, which has the valuable property of exciting the process of oxidation; hence has good effect in cases of anæmia, diabetes and uræmia.—B.M.J.E. ii./93,63.

For anæmia with irregular menses, several injections may be made between periods, preferably into muscular substance.—Bull. Med. xxviii.3,1903.

Tablets of Didymin (Testicular Substance), 5 grains (0·32 Gm.).

Spermin (Poehl) is sold in 2 per cent. solution in capsules containing about 1 Cc. for hypodermic injection.

Spermin Essence (Poehl) for internal use.

Dose.—20 to 30 drops twice daily.

The definite body, Spermin, may be obtained not only from testicles, but also from the ovaries and pancreas, and especially from the roes of fish at spawning time.

Hysteria not improved, only nervous debility following toxic disease.—B.M.J.E. ii./93,59.

Twelve of 14 cases of locomotor ataxy greatly improved by testicle fluid.—Med. Ann. 1894,409.

Orchitic extract as a restorative.—B.M.J. i./95,1261.

Valuable as a cardiac tonic.—B.M.J.E. ii./96,14.

Spermin relieved malignant syphilis.—L. ii./96,469.

Recent summary of uses.—L. i./02,1089.

Relieves abnormal action of the heart, anæmia, tabes and endarteritis.—L. i./02,326.

Exophthalmic goitre relieved.—B.M.J. i./04,15.

Spleen.

A special use of the spleen of healthy animals as a food has been tried in cases of lymphadenoma.

It is alleged that Splenic principles are blood-forming and alterative, and their use has been suggested in cases of anæmia, chlorosis, rickets and phthisis.

Improvement has followed the use of spleen and its extracts in cases of Graves' disease, but such extracts sometimes give rise to nausea and indigestion, and, if given hypodermically, may produce local inflammation and abscesses.

Spleen extract aided digestion and nutrition, increased the cutaneous circulation, stimulated glandular action, and improved the mental condition of insane persons. Bullock's spleen was used; an extract was made, of which one drachm represented one drachm of fresh spleen; dose beginning at 1 to 3 drachms, and increased to an ounce.—M.C., March 1898,439.

Clinical study on spleen extract.—B.M.J. ii./98,684.
Hastens recovery in typhoid.—B.M.J.E. i./00,48.
Latest note on.—L. i./02,1095.

Tablets of Spleen Substance, 5 grains (0·32 Gm.).

Supra-renal Capsules.

The active principles of these organs have been found during the last few years to be most valuable remedies both by the physician and surgeon.

The fresh gland was first given to relieve Addison's disease, then dried preparations were used, also liquid extracts, and lastly an active principle, Adrenalin, in the form of its Chloride is now used both internally and externally for many purposes.

These preparations are notable for causing contraction of small blood vessels when applied locally, blanching the skin or mucous membrane, and for a general tonic effect on the arteries when given internally; they strengthen the heart's action, slow and regulate the pulse. Locally there is an astringent action, and capillary bleeding, epistaxis and menorrhagia are checked; useful for bleeding after tooth extraction, and of the greatest value applied to the nostrils for hay fever and coryza. It is applied by the surgeon locally to check bleeding and blanch the parts for operations on the eye, ear, nose, throat and larynx.

Internally the action resembles digitalis and may be given to check hæmoptysis, hæmaturia and intestinal bleeding, and to relieve collapse and syncope from chloroform. Given by the mouth, or injected hypodermically, or by intravenous method, bleeding in cases of hæmophilia has been controlled by the Adrenalin Chloride Solution. Its use has been suggested in Graves' disease, The maximum effect is produced by intravenous injection of $\frac{1}{120}$ grain (0·0005 Gm.) of the dry extract per $2\frac{1}{5}$ pounds (1 kilogramme) of body weight; $\frac{1}{800}$ grain (0·000075 Gm.) has a distinct action on the heart and arteries of an adult.—B.M.J. ii /02,170.

Tablets, Compressed, of **fresh Gland Substance,** each equivalent to 5 grains are prepared.

Supra-renal Extract, Dry.

Dose.—$\frac{1}{2}$ to 3 grains, three times a day.

This is prepared of such strength that 1 grain represents 8 grains of fresh sheep's supra-renal gland substance.

Supra-renal Snuff contains

Dry Supra-renal Extract 1, Menthol 2, Ammonium Chloride 6, Boric Acid 4, Lycopodium 4, and is for use in hay fever. **Rhinodyne** contains this extract.

Tabellæ, Chocolate contain $\frac{1}{2}$ grain of dry extract equivalent to 4 grains of fresh gland, and are agreeable for internal administration.

Nebula Extracti Supra-Renalis, C.L.T.E.

Supra-renal Extract 48 grains, Sodium Sulphate 10 grains, Distilled Water to 1 ounce.

Liquid Extract.

Dose.—10 to 15 minims (0·6 to 0.9 Cc.).

This is a light brown liquid prepared with glycerin, strength 1 = 1 of the fresh gland. It was with this preparation that all the early valuable results were obtained.

For local application it is rarely used stronger than 10 per cent.

Suppositories contain 3 minims of the Liquid Extract in 15 grains of Gelatin basis; used to check bleeding piles.

Suppositories, Supra-renal with Morphine.—These contain $\frac{1}{4}$ grain of Morphine Hydrochloride in addition. Useful for painful piles.

Uterine Injection.—1 part in 10 may be used.

Ointment.—Liquid Extract 50 minims, Liquid Paraffin 2 drachms, Hydrous Wool Fat to 1 ounce. It may be scented with Otto of Rose.

Spray for the Nose and Throat.—For use in hay fever and coryza contains 5 per cent. of the Liquid Extract.

Hypodermic Injection. *Dose.*—1 to 5 minims.—The Liquid Extract is employed, or diluted with Normal Saline Solution.

Cardiac ailments, beneficial results. — B. M. J. E. ii./01,16.

Valuable hæmostatic.—B.M.J. ii./01,1527.

Gastric intestinal hæmorrhage, uniformly goood results.—B.M.J, ii./01, 1596.

Naso-pharyngeal hæmorrhage stopped.—B.M.J. i./02, 266; Pr. lxx.311.

Addison's disease improved.—B.M.J. ii./02,84.

Prostatic hæmorrhage checked.—B.M.J. i./01,1266.

Acne rosacea well treated by local, in addition to internal use.—B.M.J.E. i./01,55.

Adrenalin.

This is an active principle (first prepared by Dr. Takamine) in grey crystals, difficult of solution, hence the Chloride in solution is in use. The gland contains other principles which have not yet been examined. Hemisine, Renoglandin, Supra-renalin and Renostypticin are similar preparations.

In the preparation of Adrenalin the supra-renal capsules are reduced to pulp and macerated, excluding oxygen as much as possible, in warm (50° to 80° C.) water or very dilute acid for 5 hours, the mixture being then heated at 90° to 95° C. to coagulate albuminoids. This aqueous extractive is evaporated and extracted with alcohol. Precipitation from this liquid of impure Adrenalin follows by means of ammonia. It is purified by ether-alcohol, and re-precipitation with ammonia or fixed alkali.

Adrenalin Chloride Solution.

Dose.—5 to 30 minims (0·3 to 1.8 Cc.), by the mouth.

This is a solution of 1 of the Adrenalin Chloride in 1,000 of Normal Saline Solution, with 0·5 per cent. of Chloretone. This solution may be diluted with Normal Saline Solution 10 times (or less) for use as hypodermic injection. It has also been suggested for intravenous use. It controls the heart's action (like digitalis), and $\frac{1}{200}$ of a grain produces marked effect in cardiac failure. A few drops locally applied render the area blanched and bloodless. It has been injected with Cocaine and

Eucaine to cause anæsthesia and bloodless surgical operations (*vide* Eucaine, p. 211). Both these combinations have been applied to epitheliomatous growths and ulcers.

For spray inhalation the strength of 1 in 2,500, or even 1 in 5,000 parts is effective in the nostrils or within the uterus. Schäfer considers it acts more strongly on uterine muscle than any other drug.

The Adrenalin in solution is easily oxidisable, and the solution turns pink on exposure to air and light, hence the bottles should be opened as little as possible.—Barker.

“**Sterules**” **of Adrenalin** are prepared. In these the activity of the solution persists for months, in all probability for years, owing to their being hermetically sealed.

Glass Capsules are also prepared containing 10 and 15 minims, having elongated ends, which may be snapped off; these are a great convenience, particularly in dental work, to check hæmorrhage after tooth extraction.—B.M.J. i./03,849.

The 15 minim size are for use with the β Eucaine Powders in infiltration analgesia (*v.p.*211).

Suppositories, Hollow, of Cacao Butter are prepared, containing 10 minims of the solution.

Lancet Laboratory Report.—L. i./01,1477.

A strong hæmostatic and cardiac stimulant.—L. ii./01, 1752.

Checks intestinal bleeding.—B.M.J. i./02,654, i./04, 430.

Eye practice, control of congestion and bleeding.—B.M.J. i./02,707,1142.

Stops nasal bleeding.—B.M.J. ii./02,976; Epistaxis cured by packing nostrils with gauze dipped in Adrenalin Solution 1, Saline solution 2.—B.M.J. i.04,489.

Controls vesical bleeding. — B.M.J.E. ii./02,56; ./03,421.

Checks the hæmoptysis of phthisis, in 1 drachm doses of 1 in 5,000 solution.—B.M.J. i./04,191,365.

Coryza aborted by Adrenalin and Cocaine spray olution.—B.M.J.E. ii./02,3.

Use in many varieties of hæmorrhage and nasal ilments.—B.M.J. ii./02,170,976.

Hay fever cured by spray of 1 in 10,000.– L. ii./01, 88.

Graves' disease and Addison's disease, effects in.—B.M.J. ii./02,170; i./04,131.

Uterine hæmorrhage checked by Adrenalin applied on a tampon.—B.M.J. ii./03,1504.

Purpura well treated by solution in 10 minim doses.—M.A. 1904,605.

Fails for hæmoptysis, but valuable in hæmatemesis.—B.M.J. i./04,603.

Thymus Gland.

Dose.—3 to 10 grains (0·2 to 0·65 Gm.)

Is prepared and is sold in the form of a dry powder as **Desiccated Thymus Gland.** One grain of this represents 8 grains of the fresh gland of the calf. The preparations obtainable from different makers vary in strength. The treatment by Thymus gland does not appear to cause pyrexia, or any form of constitutional disturbance.

Has been given to improve states of defective nutrition in childhood, for anæmia, Graves' disease, hæmophilia, chlorosis, and leucocythæmia. The raw gland may be given in doses of thirty grains increased to an ounce.

Tablets, 3 and 5 grains.

Tablets are of value in rickets.—B.M.J.E. i./02,40.

Good effect in cases of exophthalmic goitre.—B.M.J. ii./95,47; i./96,656; L. i./96,571; ii./96,173,569.

Relieves urticaria and checks bleeding.—L. i./96,153.

Hæmostatic action observed.—P.J. 1895,959.

Distinct physical good effects, but no mental improvement resulted in three mental cases.—B.M.J. ii./00,819.

Recent summary: Is useful in tachycardia.—L.i./02, 1093.

Liquid Extract of Thymus Gland.

Dose, ½ to 2 drachms (1·8 to 7·0 Cc.)

A glycerin extract, of which 1 minim equals 1 grain of the fresh gland.

Thyroid Gland.

This gland, and preparations made from it, have been employed for relieving myxœdema, cretinism, lupus, psoriasis, and chronic eczema. The methods applied have been (1) by feeding with the glands; (2) by grafting; (3) by the exhibition of the official **Thyroid Solution** by the mouth or hypodermically; (4) by **Dry Thyroid**, in powders, cachets, or tablets.

Success has been most notable in cases of myxœdema and goitre; insane persons and weak-minded children have also improved under its use.

Thyroid preparations should not be given for Graves' disease.

Bromine and Iodine have both been found by analysis in the Thyroid glands of the sheep.

It is also stated, by Gautier, that Arsenic is a constituent of the nucleins of the gland.—P.J. i./00,41.

Liquor Thyroidei, THYROID SOLUTION (*Off.*).

Dose.—5 to 15 minims (0·3 to 0·9 Cc.), freshly prepared.

This official preparation does not keep well; it does not contain sufficient glycerin. It is better to add glycerin 15 to 20 of the sliced and bruised tissue, macerate 24 hours, press, and make up to the required volume with glycerin and water *partes æquales*.—P.J. ii./02,140.

Mixtures containing Liquor Thyroidei should be prescribed with chloroform water.

Thyroideum Siccum, DRY THYROID (*Off.*).

Dose.—3 to 10 grains (0·2 to 0·65 Gm.), in cachets.

Fifteen grains daily are enough; too large doses have been given.—W.

Tablets, 1½ and 5 grains (0·1 and 0·32 Gm.).

The healthy glands are minced, dried, powdered, and exhausted of fat by means of petroleum ether; should be carefully kept dry.

Iodothyrin.—*Syn.* THYRO-IODIN.

Prepared by extraction of pancreatised gland by means of petroleum ether, solution in soda, and precipitation by sulphuric acid; adjusted in strength to contain 0·03% of Iodine.

Tablets, 5 grains (0·32 Gm.) each, about equivalent to 5 grains of the fresh gland.

These tablets are used for goitre, obesity, myxœdema, psoriasis, eczema, menorrhagia, and for rickets.

Thyro-glandin. A thyroid extract prepared for obesity and myxœdema.

Dose.—3 to 5 grains (0·2 to 0·32 Gm.).

Pills 1 gr. and tablets 2 grs. are prepared.

Method of extraction.—P.J. ii./98,166; B.M.J. ii./98, 79; Jour. Phys. xx. 474.

References to Thyroid Treatment.

Victor Horsley's notes on grafting the thyroid gland. —B.M.J. i./90,287; ii./90,201.

Fenwick notes a diuretic action.—B.M.J. ii./91,798.

Numberless reports of the relief of myxœdema and cretinism have been recorded. Opinion varies as to its value in obesity.

Cases of psoriasis cured.—B.M.J. ii./93,763,933, 1424; i./94,13,186,617; i./95,697.

Summary of results of use in the insane, satisfactory. —L. ii./94,846.

Successful use in pityriasis rubra, ichthyosis.— B.M.J. i./95,695,696,697; ii./97,1334.

Recommended for alopecia.—B.M.J. ii./95,77; P.J. ii./95,215.

Cases of lupus improved.—B.M.J. i./96,725,813,945; B.M.J. ii./96,1200; L. ii./98,1202.

Acromegaly improved.—B.M.J.E. i./96,51; L. ii./96, 614.

In some patients the thyroid treatment has set up glycosuria.—Berlin. Klin. Woch., 1897,518.

Tends to assist the development of backward children. —B.M.J. i./98,618.

Carcinomatous nodules succeeding cancer of breast removed by operation, disappeared under 15 grains of thyroid extract daily.—L. i./98,1460.—Pr. lxvi.485.

The pharmacology of the thyroid.—B.M.J. ii./98,142.

Résumé of effects of thyroid preparations used in 130 cases of mental disease.—B.M.J. ii./00,815.

Apathy may follow use of thyroid.—B.M.J.ii./00,582.

Hæmophilia controlled by Liquor Thyroidei.—B.M.J. ii./00,1375.

In auto-intoxication of pregnancy and impending eclampsia. Full doses.—L. i./03,307.

Anti-Thyroid Serum. *Syn.* ANTITHYROIDIN MŒBIUS.

Dose.—8 to 75 minims (0·5 to 5 Cc.) in wine, syrup or milk.

The symptoms of Graves' disease and goitre are, by some physicians, supposed to be due to excessive production of thyroid secretion; hence to neutralise this it was thought well to introduce into the body a preparation of the serum of animals who have suffered thyroidectomy, upposing such serum to contain in excess the harmful rinciples which should be neutralised by the thyroid ecretion. The milk of thyroidectomised animals has lso been given with good results.

The serum of rams, from which the thyroid glands ave been removed six weeks prior to bleeding, is preerved by adding 0·5 per cent. phenol. It is said to keep ndefinitely and to reduce the size of goitre rapidly.

In Graves' disease, improvement.—B.M.J.E. ii./02, 1 ; i./04,35 ; L. i./03,78 ; ii./03,78 ; ii./03, 910.

ther Organic Principles.

The following preparations of animal glands and ssues are also obtainable but have not come into general e by physicians ; Cardin (Heart Extract), Mammary ubstance, Parotid Gland, Pituitary Body, and Prostate land Substance.

GAUBIUS' TABLE

Of Proportion of Dose according to Age.

r an adult, suppose the dose to be		1	or	60	grains
Under 1 year will require	,,	$\frac{1}{12}$	,,	5	,,
,, 2 ,, ,,	,,	$\frac{1}{8}$	,,	8	,,
,, 3 ,, ,,	,,	$\frac{1}{6}$	,,	10	,,
,, 4 ,, ,,	,,	$\frac{1}{4}$	,,	15	,,
,, 7 ,, ,,	,,	$\frac{1}{3}$	,,	20	,,
,, 14 ,, ,,	,,	$\frac{1}{2}$	,,	30	,,
,, 20 ,, ,,	,,	$\frac{2}{3}$	,,	40	,,
to 60, the full dose, or		1	,,	60	,,

Above this age, an inverse gradation must be observed.

Another rule is, for children under 12, add 12 to the e, and divide the age by the amount thus obtained; thus r 8 years $\frac{8}{8 + 12} = \frac{2}{5}$ of adult dose.

MINERAL WATERS.

The following information regarding mineral waters has been obtained by applying in most instances direct at the sources.

The arrangement of the paragraphs is as follows:— The name of the water and locality is given, then follow in order the names of spring or springs, the nature of the water, the chief chemical constituents, the uses, the season, if any, at the health resort, and an indication as to whether the water is imported in the bottled condition. The accounts of some are, however, condensed.

Adelheidsquelle (BAVARIA). — Saline Tonic. Sodium Chloride and Carbonate, Carbonic Acid. Skin affections, rheumatism, gout, women's diseases. May to September. Imported.

Aesculap (HUNGARY).—Aperient. Magnesium and Sodium Sulphates, Sodium Chloride and Calcium Sulphate. Occasional and habitual constipation, bowel and liver disorders. Imported.

Aix-les-Bains (SAVOY).—Anti-rheumatic. Sulphur and a curious organic matter called Baregine, which renders it easy of digestion, oily and suitable for massage. Rheumatism, gout and throat diseases. 1st April to end of October.

Aix-la-Chapelle (AACHEN, PRUSSIA). — Saline, Sulphurous. Both drunk and for baths. Sodium Chloride, Sodium Bicarbonate, Sodium and Potassium Sulphates, some Sulphuretted Hydrogen, Carbonic Acid. Rheumatism, gout, stiff joints, skin diseases, syphilis. 15th May to 30th September, also winter season 15th September to 31st March, and imported.

Alet (AUDE, FRANCE)—Source des Bains and Source Nouvelle. — Alkaline carbonated. Calcium and Magnesium Bicarbonates, small quantity of iron, Carbonic Acid. Pregnancy, debility, dyspepsia, intestinal disorders, anæmia. June 1st to September 30th, and imported.

Alexanderbad (BAVARIA).—Chalybeate. Iron and Manganese. Anæmia, chlorosis, incipient phthisis, various diseases of women, nervous diseases. May 15th to beginning of October.

Alexisbad (GERMANY). 3 springs: Alexisbrunnen, Schönheitsquelle, Stahlbrunnen or Grotte. — Chalybeate. Iron, Manganese, Potassium Chloride, Free Carbonic Acid. Anæmia, diabetes, nervous diseases and women's diseases. May 20th to September 20th.

Allevard (Isère, France).—Sulphurous carbonated. Calcium and Magnesium Bicarbonates, Sodium Chloride, Calcium, Sodium and Magnesium Sulphates, free Sulphuretted Hydrogen, Carbonic Acid and Nitrogen. Chest affections of all kinds, skin diseases, women's diseases, rheumatic complaints. June 1st to September 30th, and imported.

Apenta (near Budapesth). — Aperient. Magnesium, Sodium and Calcium Sulphates, Sodium Chloride with small quantities of Lithium and Potassium Sulphates. Habitual constipation, hepatic torpor, congestion, hæmorrhoids, gall stones, gout, uric acid diathesis. Imported.

Apollinaris (Neuenahr, Germany).—Acidulated alkaline. stable water. Sodium Chloride, Calcium and Magnesium Bicarbonates, with large excess of Carbonic Acid. Catarrhal affections of the respiratory organs and mucous membrane, acute and chronic laryngitis, bronchitis, dyspepsia, gout and gravel. Imported.

Arabella (Hungary). —Saline aperient. Magnesium, Sodium Sulphates, similar to Apenta. Obesity, gout, rheumatism, liver and kidney disorders. A mild purge. L.ii./03,322. Imported.

Baden - Baden (Germany). — Arsenical, Lithiated. Anæmia, chlorosis, gout, dyspepsia, paralysis. Summer and imported.

Baden (near Vienna).—Sulphurous. Calcium and Sodium Sulphates; rises warm and contains free Carbonic Acid. Rheumatism, gout, diseases of bones and joints, metallic poisoning, scrofula and syphilis. Throughout the year.

Bagnères-de-Luchon (Haute Garonne) and **Bagnères-de-Bigorre** (Hautes Pyrénées, France) Labassère. Sulphurous, warm. Sodium Sulphydrate. Skin affections, chronic bronchitis, lung, skin and rheumatic affections. Imported.

Barèges (Hautes - Pyrénées, France). - Sulphurous, warm. Sodium Sulphydrate and Sulphate, Sodium Chloride, Silica. Chronic rheumatism, skin and bone diseases. Imported.

Barium (Llangammarch Wells, Wales).—Saline. A tumbler full three or four times daily. Sodium Calcium, Magnesium and Barium Chlorides. Good organically. Only ·0056 grs. per gallon of Albuminoid Ammonia. Contains no sulphates owing to presence of Barium. Heart affections, glandular swellings, skin affections, rheumatism. Bottled, both aerated and still.

Bath (see Sulis, which is Bath water, aerated and bottled).

Bellthal (Mosel Sprudel bei Coberrn a.d. Mosel, Germany).—Table water. Carbonic Acid, Sodium Chloride; free from organic impurity. Summer.

Bethesda (Wisconsin, U.S.A.). — Alkaline. Calcium and Magnesium Bicarbonates. Kidney diseases, Bright's disease, diabetes, torpid liver, dyspepsia, insomnia. Imported.

Bilin (Bohemia).—Alkaline acidulated table water. Sodium Carbonate, Sodium Chloride, Sodium Sulphate, Lithium Carbonate, Free Carbonic Acid. Catarrh of the stomach and of the respiratory organs, rheumatism and for Bright's disease. Summer and imported. Pastilles are also prepared

Birmenstorf (Switzerland). — Saline aperient. Magnesium Sulphate, Sodium Sulphate, with smaller proportions of Calcium Sulphate and Magnesium Chloride. Habitual constipation, jaundice, hæmorrhoids, uric acid troubles. Imported.

Birresborn (Vulkan, Eifel, Germany).—Alkaline and slightly chalybeate table water. Sodium, Magnesium, and Calcium Bicarbonates, Sodium Chloride, Carbonic Acid. Dietetic. Imported.

Bocklet near Kissingen, Germany).—Chalybeate saline. Chlorides and Sulphates, Ferrous Carbonate. Anæmia and nervous disorders, women's diseases. Imported.

Bonifacius (at Salzschlirf, Hesse-Nassau).—Four wells. Saline Lithiated. Sodium, Magnesium, and Lithium Chlorides, Carbonic Acid, Calcium Sulphate and Bicarbonate. Rheumatism, gout, gall stones, stimulates intestines and urinary organs. 1st May to 1st October, and imported.

Bonnes (see Eaux Bonnes).

Bourboule, La (Puy de Dôme, France) Choussy-Perrière Spring.—Arsenated, 1 litre = 0·028 gm. Crystallised Sodium Arsenate (1·9 grs. per gallon), Sodium Chloride and Bicarbonate. *Dose*, a large tumblerful. Debility, anæmia, chest affections, arthritis. Imported.

Brides-les-Bains (France). Alkaline saline. Obesity, uric acid diathesis, constipation. Imported.

Bruckenau (Germany). — Ferruginous. For women's diseases, anæmia. Imported.

Brucourt (Calvados, France). "Star" Spring.—Chalybeate. Ferrous Bicarbonate, Magnesium Sulphate, Calcium Bicarbonate. Tonic in anæmia and chlorosis. Imported.

Buda-Pesth, St. Lucasbad (Hungary). (See also Kristaly.)—Warm Sulphurous. Potassium, Sodium and Calcium Sulphates, Sulphuretted Hydrogen. For bathing, sulphur mud baths, in chronic rheumatism, sciatica, gout, skin affections. Internally, the hot sulphurous springs for intestinal diseases, constipation, hæmorrhoids. Frequented all the year round.

Buffalo Lithia (Mecklenburg Co., Va., U.S.A.).—Three springs, No. 2 the chief. Alkaline Lithated table water. Calcium Bicarbonate and Sulphate, Carbonic Acid nd Sulphuretted Hydrogen. Albuminuria, uric acid diahesis, and other affections necessitating alkaline treatment June 15th to October 1st, and imported.

Bussang (Vosges, France).—Ferruginous tonic and igestive. Free Carbonic Acid, Sodium, Calcium, Magnesium Bicarbonates with Manganese, Iron, and Arsenic. Anæmia, hlorosis, jaundice, gout, rheumatism, diseases of women. 5th June to 15th September, and imported.

Buxton (Derbyshire).—Slightly Saline. Sodium Chloride, Magnesium Carbonate, Calcium Carbonate, Free Nitrogen nd Carbonic Acid. Stomach, bladder, liver, and kidney isorders, skin affections, gout, rheumatism, sciatica. All he year round and bottled.

Cachat (see Evian, Source Cachat).

Cambrunnen (Taunus, Germany).—Alkaline. Dyspepsia, rheumatic affections, skin diseases. Imported.

Capvern (Hautes Pyrénées, France).—2 springs: Houn-Caoude (drinking) and Bouridé (baths). Alkaline. ulphates and Bicarbonates of Calcium, Magnesium, and odium, Carbonic Acid. Catarrh of bladder, gravel, gall tones, women's diseases. May to October, and imported.

Carabana (Spain).—Purgative. Sodium Sulphate. Inestinal and hepatic affections and dyspepsia. Imported.

Carlsbad (Bohemia).—A number of springs practically ll the same; that known as Sprudel is the most important. lkaline, Lithiated. Sodium Bicarbonate, Sulphate and Chloride, Lithium and Calcium Bicarbonates and Carbonic cid. Obesity, constipation, stomach, intestinal, liver, idney, and bladder disorders, gout, and diabetes. All the ear round (principally in July). Imported. Carlsbad prudel Salts (dry and crystals) are also supplied.

Cauterets (Pyrenees).—Sulphurous. Sulphuretted Hydrogen, Iodine. Skin and lung diseases, glandular wellings. Summer, and imported.

Challes (Savoy).—Sulphurous. Sodium Sulphydrate ree Sulphuretted Hydrogen. Chronic catarrh, skin affections nd intestinal diseases. May 15th to October 15th, and mported.

Châteldon (Puy de Dôme, France).—Alkaline Acidulated. Calcium, Sodium, Magnesium, and Ferrous Bicarbonates, ree Carbonic Acid. Stomach and urinary disorders, anæmia, nd as a table water. No season. Imported.

Châtel-Guyon (Auvergne, France). Source Gubler.—Alkaline. Calcium, Sodium, Potassium and Lithium Bicarbonates, Magnesium and Sodium Chlorides, free Carbonic Acid. Dyspepsia, jaundice, anæmia, constipation, uric acid diathesis. May 15th to October 15th, and imported.

Claudia (Sorgente di Anguillara, Sabazia near Rome).—Alkaline. Carbonic Acid with small quantities of Alkaline Bicarbonates. Gastric dyspepsia. Imported.

Condal (Rubinat, Lérida, Spain).—Aperient, Sodium Magnesium, Calcium and Potassium Sulphates, Sodium Chloride. As a purgative for habitual constipation, plethora, &c. Imported.

Condillac (France).—Alkaline acidulated table water. Imported.

Contrexéville (Vosges, France). Pavillon Spring.—Alkaline, Anti-rheumatic. Calcium and Magnesium Bicarbonates, Iron and Lithium Salts, free Carbonic Acid. Gravel, gout, gouty diabetes, dyspepsia, eczema, catarrh of the bladder and liver. 20th of May to 20th of September, and imported.

Desaignes (Eau de César) (Ardêche, France).—Alkaline Acidulated. Sodium, Potassium, Calcium and Magnesium Bicarbonates, free Carbonic Acid. Table water. Imported.

Dolecoed. See **Llanwrtyd.**

D'Orezza (Corsica). Chalybeate table water. Calcium Bicarbonate, Ferrous Bicarbonate, Carbonic Acid. Anæmia, chlorosis, dyspepsia; useful after prolonged illness, or for weakness. 1st July to 1st September. Imported.

Driburg (Westphalia).—Chalybeate, Tonic, Aperient. Sodium Sulphate, Magnesium Sulphate, Bicarbonate of Calcium, and Magnesium, some Iron and Manganese Carbonic Acid. Stone in the kidney and kidney diseases generally, neurasthenia, nervous diseases, women's diseases anæmia May 1st to October 10th, and imported.

Eaux Bonnes (Basses-Pyrénées, France).—Mild Sulphurous. Sodium Sulphate and Chloride, Calcium Sulphate Sulphuretted Hydrogen; similar to Barèges and Cauterets Bronchial catarrh, phthisis, neurasthenia, asthma. Principal season, 1st June to 1st October, and imported.

Eilsen (Schaumburg-Lippe, Germany) — Sulphurous Calcium Sulphate, Sulphuretted Hydrogen, Carbonic Acid Asthmatic affections, neurasthenia, cardiac asthma, bronchia affections, chlorosis. 15th May to 31st August.

Elizabeth Iron Water (Zaandam, Holland).—Chalybeate. Sodium Chloride, Ferrous Bicarbonate. Anæmia, indigestion, nervousness, melancholia, headache. Imported.

Ems, Bad- (GERMANY).—Alkaline Saline; rises warm, Sodium, Calcium and Magnesium Bicarbonates, Sodium Chloride, free Carbonic Acid. Indigestion, asthma, emphysema, gout, useful in coughs with expectoration, and pulmonary catarrh. May 1st to September 30th, and imported.

Enghien-les-Bains (near PARIS). — Sulphurous, Sulphuretted Hydrogen, Magnesium Sulphydrate, Carbonic Acid, Lung affections, skin diseases, uterine disorders, nervous diseases, nose and ear affections. May 1st to October 15th, Imported.

Esvach.—Aperient. Magnesium, Sodium and Potassium Sulphates and Bicarbonates, free Carbonic Acid. Habitual constipation, indigestion, biliousness, gout. Bottled.

Evian-les-Bains (HAUTE SAVOY). Sources "Cachat" and La Croix. — Alkaline table water. Calcium and Magnesium Bicarbonates, free Carbonic Acid. Liver and intestinal disorders; used in large quantities for washing out the bladder in uric acid troubles; calculi, cystitis. May 15th to October 15th.

Fachingen (NASSAU, GERMANY). — Alkaline Acidulated, Bicarbonates of Alkalies and Alkaline earth metals. Said to be bacteriologically pure, and to be useful in infectious diseases, *e.g.*, typhoid, cholera, also for use in the tropics in malaria, and for intestinal diseases, gastric catarrh, heartburn, uric acid diathesis, rheumatism, diabetes, nephritis. Imported.

Fiuggi (ITALY).—Saline. Sodium Chloride, Potassium Nitrate, Calcium Carbonate, Carbonic Acid, Oxygen, Nitrogen. Gastric complaints. Imported.

Flitwick (near AMPTHILL, BEDFORDSHIRE).—Ferruginous Ferric Persulphate and Sodium Sulphate. Anæmia, chlorosis, dyspepsia, general debility and neuralgia. Bottled

Fontalis. — A pure table water, aerated. Alkaline. Chlorides and Carbonates, free from Lime and Magnesium Salts. Bottled at Harrogate.

Forges (NORMANDY).—Chalybeate. Ferrous Bicarbonate Chlorosis, dyspepsia. June 1st to October 1st. Imported.

Franzensbad (BOHEMIA).—Aperient, Alkaline, Ferruginous. Sodium Sulphate, Sodium Carbonate, Ferrous Carbonate, free Carbonic Acid. Intestinal catarrh, enlargement of the liver and spleen, Bright's disease, gout, scrofula, anæmia, general debility, diabetes. Also mud baths. May 1st to September 30th. Imported.

Franz Joseph (BUDA-PESTH, HUNGARY). — Aperient. Magnesium and Sodium Sulphates, Carbonic Acid. Habitual constipation, diseases of the liver, for piles, biliousness, headache, catarrh of the stomach and intestines. Imported.

Friedrichshall (SAXE-MEININGEN, GERMANY) —Aperient Magnesium and Sodium Sulphates, Sodium Chloride, Magnesium Chloride. Constipation, intestinal complaints, biliary disorders, gallstones, gravel, gout, scrofula; an active diuretic and for hæmorrhoids. Imported.

Gastein, Bad- (AUSTRIA).—Very slight mineral contents. Suitable for weak digestion, nervous disorders, paralysis, uterine affections. Imported.

Geilnau (GERMANY).—Alkaline table water. Imported.

Gerolstein (PRUSSIA).—Alkaline table water. Sodium, Calcium and Magnesium Bicarbonates, practically free from organic matter, Carbonic Acid, Antacid. Diuretic. Imported.

Giesshübler (bei KARLSBAD, BOHEMIA.)—Alkaline acidulated table water. Sodium, Potassium, Magnesium and Lithium Bicarbonates, free Carbonic Acid. Intestinal catarrhs, dyspepsia, heartburn, hæmorrhoids and gout. Imported only.

Godesberger (GERMANY). — Table water. Alkaline Saline, Chalybeate. Imported.

Grassion (FRANCE). Bituminous. Throat and chest affections, gastric and vesical catarrh. Imported.

Griesbach (GERMANY). Tonic ferruginous table water. Imported.

Guber (SREBRENICA, BOSNIA).—Chalybeate. Ferrous Sulphate, Aluminium Sulphate, Potassium and Sodium Sulphates, Arsenious Acid. Anæmia, chlorosis, fevers, skin diseases, nervous affections. Imported.

Halle (BAVARIA) Saline Bromo-iodised. Goitre, scrofulous swellings. Imported.

Harrogate (YORKSHIRE).—Sulphurous. Sodium Sulphurate, Sodium, Magnesium and Calcium Chlorides, Calcium Carbonate, Magnesium Bromide. Sulphuretted Hydrogen, Skin affections, gout, rheumatism, anæmia, dyspepsia. Aperient and diuretic. Summer ana winter, and bottled.

Hathorn (see SARATOGA).

Homburg von der Höhe (GERMANY). Elizabeth-brunnen, Kaiser-brunnen and Stahl-brunnen-saline chalybeate, acidulated. Sodium and Magnesium Chloride, Ferrous, Calcium and Magnesium Bicarbonates, Carbonic Acid. Chronic catarrhs of stomach and bowels, habitual constipation, gout, scrofula, chlorosis, inaction of the liver, diabetes and general tonic. May 1st to October 1st, and imported.

Hunyadi János (BUDA-PESTH). — Aperient. Large percentage of Magnesium and Sodium Sulphates, Sodium Chloride, and Sodium and Calcium Bicarbonates. Constipation and biliousness. Imported only.

Iodbad Lippik. See **Lippik.**

Johannis (HESSE-NASSAU). — Saline acidulated tonic table water. Calcium, Magnesium and Sodium Bicarbonates, and Sodium Chloride. Imported.

Kaiser Brunnen (AIX-LA-CHAPELLE).—Table water. Sodium Chloride, Bicarbonates. Gout, rheumatism and dyspepsia.

Kissingen (BAVARIA, GERMANY), RAKOCZY and PANDUR.—Saline, Chalybeate. Sodium and Potassium Chlorides, Iron and Calcium Bicarbocates. Anæmia, general debility, mental exhaustion, heart, liver, and kidney diseases, gout, obesity, and congestions. Imported.

Kissingen (BAVARIA) BITTER WATER.—Aperient, Magnesium and Sodium Sulphates, Carbonic Acid.

Koenigsdorf (OBERSCHLESIEN, GERMANY). — Alkaline Iodised. Sodium Chloride, Calcium Chloride, Magnesium Iodide and Magnesium Bromide. Restorative, improves blood condition, strengthens nervous system, for women's diseases and for glandular swellings and skin affections. May 15th to the end of September.

Krankenheil (BAVARIA).—Sulphurous, Iodised. Sodium Chloride, Iodide and Bromide, Sulphuretted Hydrogen. Goitre and similar swellings, skin affections. Imported.

Kreuznach (PRUSSIA).—Iodised Saline. Sodium, Calcium, and Magnesium Chlorides, with small quantities of Bromides, Iodides. A tonic water, and has been employed in syphilis, tabes, tubercular affections of lungs, obesity, anæmia, skin diseases, nervous disorders, goitre, and similar swellings. All the year round. Imported.

Kristaly (at ST. LUCASBAD, BUDA-PESTH).—Table water. Magnesium and Calcium Bicarbonates, Carbonic Acid. In intestinal disorders. Imported.

Krondorf (bei CARLSBAD). — Alkaline, table water. Sodium, Calcium, and Magnesium Bicarbonates, Carbonic Acid. Chronic catarrh of respiratory tract, affections of pharynx, larynx, and bronchial tubes, also jaundice, gout, and allied disorders. Imported.

Kronenquelle (OBERSALZBRUNN, SILESIA). — Alkaline, Saline Lithiated. Sodium Sulphate Potassium Sulphate, Bicarbonates of Sodium, Magnesium, Calcium, and Lithium. Uric acid diathesis. Imported.

Kronthal (NASSAU). — Saline, table water. Sodium, Chloride, Calcium Carbonate. BLUE LABEL.—Plain table water and for dyspepsia. RED LABEL.—Pick-me-up, rheumatism, gout. GREEN LABEL.—Anæmia and tonic.

Labassère (HAUTES PYRENÉES.) See Bagnères de Bigorre.

Landeck, Bad Landeck (PRUSSIAN SILESIA). — Sulphurous. Sulphuretted Hydrogen, Sodium Sulphate, Sodium Sulphide. Nervous diseases, gout, rheumatism, and skin affections. All the year round, more particularly summer.

Langenbrücken (BADEN).—Alkaline, saline. Sulphurous. Sulphuretted Hydrogen, Magnesium Bicarbonate and Sulphate, Carbonic Acid. Chronic skin diseases, syphilis, rheumatism, gout, bronchial catarrh. May 20th to October 1st.

Leamington.—Saline. Sodium, Magnesium and Calcium Sulphates, Sodium, Calcium and Magnesium Chlorides, Ferrous Carbonate. Dyspepsia, gout, women's diseases, sciatica, glandular swellings and skin diseases. Bottled.

Levico (AUSTRIAN TYROL).—Two springs (strong and mild); Arsenical chalybeate. STRONG: Arsenious Acid, 0·09 parts per 10,000—1-12th of a grain per pint; the MILD is 1-10th of this. Further constituents: Ferrous Sulphate, and Ferric Persulphate. Anæmia, skin eruptions, neuralgio and amenorrhœa. 1st April to the end of October (Vetriolo has season June 1st to the end of September), and imported.

Lippik (SLAVONIA, HUNGARY).—Iodised water and acidulated. Potassium and Sodium Sulphates, Sodium Chloride, Sodium Iodide, Sodium Bicarbonate. Stomach diseases, scrofulosis, rheumatism, gout, glandular swellings. May 1st to September 30th.

Lippspringe (WESTPHALIA).—Alkaline, acidulated. Small quantities of Sodium Chloride, Calcium Sulphate, Magnesium Sulphate, Ferrous Carbonate with Carbonic Acid and Nitrogen. Chronic lung inflammations, asthmatic affections, bronchial catarrh, intestinal and bone diseases. 15th May to 15th September. Imported.

Llangammarch.—See **Barium.**

Llanwrtyd, Dolecoed Spa (WALES).—Sulphuretted Hydrogen, the strongest in Great Britain.

Loueche (VALAIS, SWITZERLAND).—Warm, almost exclusively for baths. Calcium Sulphate, Magnesium Sulphate, similar to that of Bath in England. Rheumatism, gout, women's diseases, skin affections. 1st May to 15th October.

Luhatschowitz (AUSTRIA.) — Saline Bromo-iodised. Sodium Chloride, Sodium Bicarbonate, with small quantities of Bromides and Iodides. Catarrhal affections, gouty exudations. Imported.

Marcols (ARDÈCHE, FRANCE), Source du Lion.—Alkaline table water. Sodium Bicarbonate, free Carbonic Acid. Gastric disorders, liver and kidney diseases, rheumatism. No season. Imported.

Marienbad (Bohemia). – Several springs, Alkaline, Saline, Chalybeate, Acidulated. Sodium Sulphate, Chloride Bicarbonates of Alkaline earth metals, Ferrous Iron, free Carbonic Acid. Gout, gravel, hæmorrhoids. Also supplied in powder and crystals. Brain and nervous diseases, melancholia and chronic gastric catarrh, dyspepsia, gall stones, obesity. Summer, and imported. Tablets are also made.

Malvern (Worcestershire). — Practically free from saline matter, and contains no organic matter. Bladder and kidney diseases and skin affections. Bottled.

Malvern Selzer.—Slightly saline table water.

Mergentheim (Wurtemburg), Karlsquelle. — Aperient Water. Magnesium and Sodium Sulphates, Sodium Chloride, free Carbonic Acid. Gout, neuralgia, gall stones, dyspepsia, obesity, rheumatism, diabetes. 1st May to 1st October.

Metternich (Bohemia).—Alkaline table water.

Miers (Lot, France).—Saline, laxative. Sodium Sulphate, Calcium Sulphate, Magnesium Chloride. Dyspepsia, calculi, migraine, obesity, albuminuria. Imported.

Missisquoi (Vermont, U.S.A.).—Sulphurous. Scrofula and other skin affections, diseases of respiratory organs. Imported.

Mondorf (Luxembourg). — Saline. Sodium Chloride, Calcium Chloride, Bicarbonates, with small quantity of Magnesium Bromide. Constipation, neurasthenia, anæmia, skin affections, jaundice, rheumatism. May 15th to October 15th. Imported.

Mont Dore (Puy de Dôme, France).—Alkaline, Saline. Bicarbonates, Ferrous Carbonate, Arsenic, and Silica. Intestinal disorders, rheumatism, asthma. June 1st to September 20th. Imported.

Nauheim (Germany).—Chalybeate, Iron, Lithia. Skin and rheumatic affections, heart diseases.

Nenndorf (Westphalia).—With mud baths. Sulphurous, Calcium Sulphurate, Magnesium Sulphate, Carbonic Acid, Sulphuretted Hydrogen. Claimed to be the strongest sulphurous water in Europe. Arthritis, rheumatism, neuralgia, skin diseases, bronchial affections, hemorrhoids, neurosis, etc. May 1st to September 30th.

Neuenahr (Prussia).—Acidulated, alkaline table water. Bicarbonates of Sodium, Calcium, Magnesium, Sodium Chloride, free Carbonic Acid. Laryngitis, bronchial catarrh, asthma, tuberculosis, liver diseases, diabetes, heart disease, diuretic. Summer, commencing May 1st. Imported as Apollinaris.

Nieder Selters.—See **Selters, Nieder-.**

Orezza.—See **D Orezza.**

Oberbrunnen (Silesia).—Alkaline Lithiated. Sodium and Lithium Bicarbonates, Sodium Sulphate, Magnesium and Lithium Bicarbonates, free Carbonic Acid. Gout, uric acid diathesis, nephritis. Imported.

Plombières (Vosges, France).—Mild Saline. Sodium Sulphate, Arsenic, Oxygen, Nitrogen. Neurasthenia, gastralgia, dyspepsia, dilation of the stomach and chronic diarrhœa, rheumatism, skin affections. May 15th to September 30th. Imported.

Pougues (France). St. Leger Spring. — Alkaline. Calcium, Magnesium, Sodium and Potassium Bicarbonates, Sodium and Calcium Sulphates. Dyspepsia, anæmia, scrofula, gravel, catarrh of the bladder. May 15th to September 30tb. Imported.

Pullna (Bohemia).—Aperient. Magnesium, Sodium and Potassium Sulphates, Sodium Chloride, Chronic Constipation, liver and intestinal affections, gallstones, gout and rheumatism, eczema. Imported.

Pyrmont (Waldeck, Westphalia). Three springs. Hauptquelle contains most iron.—Chalybeate. Calcium and Magnesium Sulphates, Ferrous Bicarbonate, Calcium Bicarbonate, Carbonic Acid. Chronic catarrh, digestive and urinary diseases, women's diseases, scrofula, rheumatism and gout. May 1st to October 10th (and imported).

Quicherat (France.)—Ferruginous. Magnesium and Sodium Chlorides, with some Iron and Manganese, Carbonic Acid. Anæmia, stomach diseases. Imported.

Recoaro (Venetia, Lombardy). Sources: Lelia, Lorgnia and Giuliana.—Ferruginous Table Waters. Sulphates. Intestinal and liver complaints. Tonic, easily assimilated. Summer and imported. Royal Bitter Source.—Is pure bacteriologically. Purgative for intestinal complaints.

Rennine (Reipertsweiler, Alsace).—Nitrated. Potassium Nitrate 0·19 Gm. per litre, Alkaline Chlorides. Diuretic, mild, laxative, in heart disease. L.ii/03, 107.

Renaison (France).—Alkaline, acidulated table water. Bicarbonates, free Carbonic Acid. Dyspepsia and gastric disorders. Imported.

Rhens (am Rhein, Germany).—Alkaline, acidulated table water. Sodium Chloride, Sulphate and Bicarbonate. Imported.

Rippoldsau (Baden).—Saline, Acidulous, Chalybeate. Calcium Bicarbonate, Manganous and Ferrous Bicarbonates, Sodium Sulphate, free Carbonic Acid. Anæmia, chlorosis, scrofula, skin affections, rheumatism, gout, neuralgia. 15th May to 1st October. Imported.

Roisdorf (PRUSSIA).—Alkaline, saline, acidulated table water. Sodium Chloride, Sodium, Magnesium and Calcium Bicarbonates, Carbonic Acid. Easy of digestion, for catarrhs of stomach and intestines, and of respiratory organs, liver and spleen affections and calculi in the bladder.

Rosbach (near HOMBURG GERMANY). — Saline, table water. Calcium and Magnesium Bicarbonates, Sodium Chloride, Carbonic Acid. Gouty and acid dyspepsia. Imported.

Royat (PUY-DE-DÔME, FRANCE). Three Springs.—Saline, Arsenated, Lithiated. Sodium, Potassium, Calcium and Magnesium Bicarbonates, Sodium Chloride with a small quantity of Sodium Arsenate and Lithium Chloride. Rheumatism, dyspepsia, nervous diseases, women's diseases, anæmia, skin affections and debility. Summer. Imported.

Rubinat (PYRÉNÉES, SPAIN). "Llorach" Spring. — Aperient. Rich in Sodium Sulphate and Magnesium Sulphate, and contains Calcium Chloride. Stomachic disorders, dyspepsia, constipation, liver and kidney affections. Imported.

Rubinat (SERRE).—Similar to the last mentioned, but stronger than the above in the proportion of Sodium Sulphate to Magnesium Sulphate. Uses similar to the above. Imported.

Saint Boès (BASSES-PYRÉNÉES, FRANCE).—Bituminous, Iodised, and Arsenated. Arsenic, Iodine. Skin and lung affections, venereal diseases. Imported.

Saint Galmier (LOIRE, FRANCE).—"Badoit" Table water. Sodium, Magnesium, and Calcium Bicarbonates, Magnesium Chloride, Sodium Sulphate, Carbonic Acid. Dyspepsia, intestinal catarrh, constipation, nervous disorders, hyperæmia. Imported.

Saint Galmier (FRANCE) "Noel."—Alkaline, Acidulated. Bicarbonates as above. Uses as "Badoit" above Imported.

Saint Gervais (HAUTE SAVOIE).—Saline. Sodium and Calcium Sulphates, Sodium Chloride. Skin affections, constipation and nerve diseases. 15th May to 30th September. Imported.

Saint Lucasbad (BUDA-PESTH).—Sulphurous. Rheumatism, neuralgia, and skin affections. All the year round. See also BUDA-PESTH.

Saint Moritz (SWITZERLAND). "Paracelse" Spring.—Alkaline, Chalybeate, Tonic. Sodium Sulphate, Calcium, Magnesium, Sodium and Ferrous Bicarbonates. Nervous and intestinal disorders, neurasthenia, neuralgia, sick headache, hysteria, Graves' disease, hypochondria, and for convalescence. All the year round. Imported.

Saint Sauveur.—See **Vernet les Bains**.

Salies de Bearn (France).—Saline. Sodium Bromide and Iodide. Skin affections and as a general tonic.

Salins les Bains (Jura, France).—Tonic. Magnesium Chloride. Iodides and Bromides. Anæmia, tuberculosis, general debility, women's diseases, obesity, and scrofulous affections. Summer. Imported.

Salutaris.—Still and aerated table water, pure distilled water. For washing out the system in kidney and liver disorders, also gout and dyspepsia.

Salvator (Hungary).—Alkaline, Lithiated. Lithium, Magnesium and Calcium Bicarbonates, Sodium Borate. Uric acid diathesis, diseases of digestive organs. Imported.

Salzbrunn (Austria).—Alkaline. Sodium and Lithium Bicarbonates, free Carbonic Acid. Chronic intestinal diseases, gall stones, rheumatic affections emphysema. 1st May to 15th October.

Salzschlirf—See **Bonifacius**.

Saratica (Austerlitz, Moravia, Hungary).—Purgative. Magnesium and Sodium Sulphate, Sodium Chloride. Gout, rheumatism and obesity. Imported.

Saratoga (U.S.A.). "Congress" and "Hathorn" springs. —Alkaline, Saline. Sodium Chloride and Iodide, Bicarbonates of Calcium and Magnesium, free Carbonic Acid. A mild aperient given in dyspepsia, skin affections, diseases of the stomach, liver, kidney, and blood, constipation. All the year round. Imported.

Sauerbrunnen (Hartz, Germany).—Table water. Very slight mineral constituents. Imported.

Schinznach (Switzerland).—Sulphurous. Sulphuretted Hydrogen, Carbonic Acid, Calcium Sulphate, Sodium Chloride. Skin affections (eczema, acne, psoriasis, urticaria), asthma, gout, rheumatism. 1st May to 15th September. Imported.

Schlangenbad (Germany).—Very slight Mineral constituents. General tonic. Imported.

Schwalbach (Nassau). Weinbrunnen and Stahlbrunnen. —Chalybeate tonic. Iron, Calcium and Magnesium Bicarbonates. Anæmia, and as a tonic. Imported.

Selters, or **Seltzer Water** (on the Lahn, Nassau), Ober and Nieder.—Alkaline, Acidulated, Table Water. Sodium Chloride, Bicarbonates, Carbonic Acid. Dyspepsia, obesity, gout, rheumatism, bronchial, bladder, kidney, and liver affections. Imported.

Soulac-sur-Mer (MEDOC, GIRONDE, FRANCE).—Health resort. Sea air.

Spa (BELGIUM). — Ferruginous. Ferrous Bicarbonate, free Carbonic Acid. Chlorosis, anæmia, women's diseases, nervous disorders, arthritis, rheumatism, gout. Summer, and imported.

Sulis (Bath Water, aerated). — Aperient table water. Calcium and Sodium Sulphates, Magnesium and Sodium Chloride.

Tarasp (SWITZERLAND), St. Lucius Spring. — Alkaline, saline. Sodium Bicarbonate, Sodium Chloride, Sodium Sulphate, Bicarbonates of alkaline earth metals and Carbonic Acid. Diuretic, useful in chronic catarrh of the stomach, dyspepsia, gastralgia, habitual constipation, disorders of nutrition and assimilation, obesity. 1st June to 15th September. Imported.

Teplitz (BOHEMIA). — Alkaline. Sodium Bicarbonate, Sodium Chloride, Sodium and Potassium Sulphates, free Carbonic Acid. Rheumatic affections, nervous diseases, paralysis. Imported.

Vals (ARDÈCHE, FRANCE). Springs: Madeleine, Précieuse, Désirée, Rigolette, St. Jean.—Alkaline, acidulated. Sodium, Calcium and Magnesium Bicarbonates, Calcium and Sodium Sulphates, Carbonic Acid. (Contents vary with the spring.) Rheumatism, gout, anæmia, skin affections. Imported.

Vernet-les-Bains (PYRÉNÉES ORIENTALES).—Sulphated. Sodium Sulphate and Thiosulphate. Constipation, skin affections, anæmia. May to October, and imported.

Vichy (ALLIER, FRANCE). Springs: Grande Grille, Hôpital, Célestins, Parc.—Alkaline, acidulated. Gravel, chronic urinary affections, diabetes, female complaints, gout, rheumatism, facilitates digestion. May 15th to September 30th, and imported.

Villacabras (SPAIN). — Saline aperient. Sodium Sulphate. Obesity and constipation. Imported.

Vittel (VOSGES, FRANCE). Spring: Grande Source.—Alkaline. Sodium and Magnesium Bicarbonates, Sodium, Calcium and Magnesium Sulphates, Carbonic Acid. Uric acid diathesis, scrofula, chlorosis, biliary and urinary congestion. Imported.

Weilbach (NASSAU).—Alkaline, sulphurous. Sulphuretted Hydrogen, Sodium Chloride, Sodium, Magnesium and Calcium Bicarbonates, free Carbonic acid. (A lithiated spring exists also.) Aperient for obstructions of the abdominal organs, antisyphilitic in lung and skin diseases. The beginning of May to the end of September. Imported.

Wiesbaden (NASSAU). Kochbrunnen.—Antacid. Sodium and Potassium Chlorides. Magnesium and Sodium Bicarbonates, free Carbonic Acid. Uric acid diathesis, rheumatic affections, and sciatica. Summer. Imported.

Wildbad (BLACK FOREST, GERMANY).—Alkaline. Warm, 37° Centigrade. Calcium and Sodium Carbonate, Sodium Chloride, free Carbonic Acid. Rheumatism, paralysis, neuralgia, scrofula, rickets, bronchial catarrh, urinary diseases. May to October.

Wildungen (WALDECK, GERMANY). Three Springs.—Alkaline. Bicarbonates, Sodium Chloride, free Carbonic Acid. Diseases of bladder and urinary organs, anæmia. Summer. Imported.

Wittekind (HALLE, GERMANY). — Sodium Sulphate. Obesity, women's diseases, rheumatism, heart and nerve diseases. 1st May to 1st October.

Woodhall (LINCOLNSHIRE). — Saline, Bromo-iodised. Bromine, Iodine, Sodium Chloride, Arsenic. Gout, sciatica, rheumatism, skin affections, goitre, women's diseases. From the end of March to the end of October.

ANALYTICAL MEMORANDA.

.—CHEMICAL TESTS AND MICROSCOPIC METHODS FOR THE EXAMINATION OF URINE, BLOOD, &c.

Acetone and Allied Bodies in Urine.

Lieben's Test is generally employed. Distil the sample and make distillate alkaline with potash, add a little iodine solution (not an alcoholic solution). The formation of iodoform, recognised by yellow turbidity and the odour, indicates presence of acetone.

Legal's Test is also useful:—

Fresh concentrated **Sodium Nitroprusside Solution** added to a specimen or its distillate containing Acetone, and the mixture made slightly alkaline with caustic potash, produces a red colour which changes rapidly to yellow. On adding Acetic Acid a reddish-violet colour is produced, which changes to blue on standing.

Diacetic Acid. Ferric Chloride gives red colouration. Reaction with Sodium Nitroprusside as above. The acid is soluble in ether, and may be removed by it after acidifying the specimen with Sulphuric Acid. Dilute Ferric Chloride solution, shaken with this ethereal solution, becomes red.

Hydroxy- or **β-Oxy-Butyric Acid** and any increase in the amount of fat (lipæmia granules stained by Osmic Acid) should be carefully looked for in the urine and blood respectively of diabetics. It may be extracted from the specimen with ether, and gives a reddish-violet colour with Ferric Chloride. Occurs only if Diacetic Acid be also present. The specimen may be fermented to remove sugar, precipitated with lead acetate and ammonia; if the filtrate be lævorotatory β-Oxy-Butyric Acid is probably present.—B.M.J. i./03,1205.

Acetone having a specific gravity of 0·8 will obviously decrease the specific gravity of a urine, and may lead to error if its presence be unsuspected in diabetic urine. This is apt to occur in an advanced stage of the disease.

Acetonuria in cases of gastric ulcer.—L. i./03,1230.

Albumin Tests.

Acetic Acid with heat. Fill a test tube about half full with filtered urine, slightly acidify with dilute acetic acid. Boil the upper portion. Albumin, if present, will precipitate in the form of a cloud which will be insoluble after cooling on further addition of acetic or nitric acids in moderate amount.

Nucleo-proteids also affect this re-action.—L. i./99, 1085. The urine may be saturated with salt before adding the acid. It is claimed that this will prevent their precipitation.

Asaprol precipitates albumin, peptone, &c., from acid solution. On boiling, peptone and albumose redissolve, albumin remains, *v.p.*360.

Carbolic Acid (saturated solution in absolute alcohol) recommended.—L. i./99,221.

Not so delicate as Salicyl-sulphonic Acid, but the latter (see below) may be too delicate for clinical work. Further, the milkiness produced by the Phenol emulsifying with the water is a drawback.—L. i./99,1393.

Said to be as delicate as Nitric Acid.—L. i./99,1456.

Resembles the older tests of Tidy and Méhu.—L. i./99,1515.

Esbach's Picric Acid Solution.

Picric Acid 10 Gm., Citric Acid 20 Gm., dissolve in about 900 Cc. boiling water, cool and add water to 1,000 Cc. This reagent is used for the approximate determination of albumin by an Esbach tube about six inches long, and 0·6 inch in diameter, the graduations of which are purely empirical, the results of experiment, and indicate approximately 0·1 up to 0·7 per cent. albumin.

For exact determinations, albumin should be precipitated by some suitable reagent, itself nitrogen-free, *e.g.* carbolic acid or tannin and the washed precipitate, dried and weighed, or better the nitrogen contained in it should be estimated by a Kjeldahl analysis, the amount of nitrogen found being multiplied by the factor 6·3 to obtain the amount of proteids.

Ferrocyanic Acid Test Pellets.

Potassium Ferrocyanide and Acetic or Citric Acid mixed in solution set free Hydroferrocyanic Acid. On the addition of such a solution to urine, it gives, without heat even, a distinct opalescence if a small, and a dense white precipitate if a large, quantity of albumin be present. Pellets are made of citric acid and also of potassium ferrocyanide to be portable. In about a drachm of urine, in a test tube, an acid pellet is first dissolved, next a ferrocyanide pellet is added and allowed to dissolve (without heat); if albumin is present a precipitate will immediately appear. This test does not precipitate peptones.

This reagent may also be applied as a ring test. 'Layer' the urine on to a mixture of 20 or 30 drops of Acetic Acid with 2 or 3 times its volume of saturated Potassium Ferrocyanide Solution. A white ring indicates presence of albumin. By this manner of proceeding the precipitation of nucleo-proteids is avoided. — L. i./99,1085.

Heller's Nitric Acid Test.

Nitric Acid is placed in a test tube and the filtered urine, or diluted filtered urine, carefully 'layered' on to it. A white ring at the juncture of the liquids indicates presence of albumin; confirm by another reliable test. Not so delicate as the **heat and Acetic Acid**, but will show 1 in 12,000 at once. Bilious urines may produce play of colours characteristic of Gmelin's test. Nucleo-proteids may hinder this test, but these are precipitated by vegetable acids.

Glass Capsules of Nitric Acid contain one minim, are convenient and portable.

Meta-Phosphoric Acid.—A small piece of this acid is freshly dissolved in water, and the solution is added to the clear filtered urine. A cloud or precipitation indicates presence of albumin.

Millon's Reagent.— Nitroso-Nitrate of Mercury. Mercury 10, Nitric Acid (Sp. Gr. 1·185) 25 by weight, Water 25. Dissolve in a flask at lukewarm heat, shaking often, and add to a solution formed by dissolving Mercury 10, in Nitric Acid (Sp. Gr. 1·25 to 1·3) 22 by weight without artificial heat. With albumin or urea this gives a yellow, then red colouration on heating.

Picric Acid Solution, Saturated.

This test is applied by 'layering' as in the Nitric Acid test; or is used as Esbach's solution, *v.p.* 594.

The administration of alkaloids may cause urine to give a precipitate with picric acid, but this is redissolved on heating to the boiling point.

Roberts' Albumin Test.—Nitric Acid 1 par Solution of Magnesium Sulphate (10 in 13) 5 part Is found to be very satisfactory. Has the advantag of high density for use in 'layering.'

Salicyl-sulphonic Acid.

In colourless crystals, prepared by action of sulphuri anhydride on salicylic acid. Soluble in water an alcohol. This test must be performed by a carefu 'layering' of the urine upon a crystal or a concentrate solution.

Is an extremely precise, reliable, and quick test giving a dense white precipitate with all proteids.

Albumin, globulin, myosin, etc., coagulate on heating

Albumoses dissolve on heating, and reappear on cooling.

Peptones are not precipitated, except in solution saturated with ammonium sulphate.

Strongly recommended. Not affected by phosphates bile, urates or alkaloids.—L. i./99,1085.

Trichloracetic Acid. A saturated solution is used i the same manner as the last test, or a crystal may b used. May precipitate uric acid and nucleo-proteids

Bile in Urine.

Nitric Acid produces a bluish-green ring and play of colours. The fuming acid has been recommended but that of official strength is better.

It was found that with a moderately icteric urine even when diluted to the extent of 1 in 50, the typica green colouration could be observed, showing the extreme delicacy of the test. Various modifications of **Gmelin's Test** have been suggested—for example, placing a littl of the specimen on a porous disc (Dragendorff) and then applying Nitric Acid, or pouring the specimen on to a filter-paper (Rosenbach) and testing the paper thus stained with Nitric Acid—but these methods seem unnecessary.—C.D. i./03,171.

Peptone Test.—Peptone, in powder 30, Salicylic Acid 4, Acetic Acid 30, Distilled Water 3,500.

Dissolve and filter till bright. On adding 20 minims of urine containing bile salts to 60 minims of this solution, an opalescence appears in proportion to the amount of bile constituents; it dissolves completely on adding acetic or citric acid, and diminishes, but does not disappear, on boiling.—*Oliver*.

Tincture of Iodine.—A few drops "layered" on to the specimen and the tube shaken gently, produce a green colour if bile pigment be present.

Hay's reaction for Bile Salts. Sublimed Sulphur sprinkled into *clear* urine containing Bile Salts commences to sink almost immediately—B.M J. i./02,702.

Chromic Acid Test. A 5 per cent. solution added gradually produces a green colour.

Sodium Nitrite with Sulphuric Acid (Vitali's Reaction) gives green colour.

The spectroscope is employed for detecting Urochrome, Urobilin, Hæmatoporphyrin, Uroerythrin.

Cholesterine. Chloroformic solution of Cholesterine with Sulphuric Acid gives a red to purple colour. An Alcoholic solution treated similarly gives a red to blue.

Cholesterine crystals in urine, in diabetes with neuritis, in cystitis, in Bright's disease, in pyonephrosis, in epilepsy, in a case of hæmaturia with fibrous casts, in tabes and lipuria, in fatty degeneration of the kidneys.—B.M.J. i /03,1008.

Tyrosin is recognised by its characteristic crystalline appearance being in shining needles, either in bundles or star form.

Leucin is in crystalline spheroidal clumps.

Blood Corpuscles

may be recognised microscopically, blood **Pigments** microspectroscopically.

Blood in Urine.—Heller's test consists in heating the specimen with strong potash or soda. If present, a colour described as bottle-green is produced, and earthy phosphates coloured brownish-red by blood are precipitated.

Ozonic Ether and Guaiacum Test for,—add a drop or two of *fresh* Tincture of Guaiacum—Guaiacum Resin 1, in Alcohol (90 per cent.) *q.s.* to 10—to a small quantity of the urine and shake, 'layer' Ozonic Ether on to the mixture. A blue colour at once, or on standing, indicates presence of blood Iodine in the urine also gives this colour (*e.g.*, if patient has been treated with iodides). Further, pus gives it with Guaicum Tincture alone, the colour disappearing on heating.

Old French Oil of Turpentine may be substituted for ozonic ether.

Blood, Estimation of Hæmoglobin.—Sir Wm. R. Gowers' apparatus consists of two tubes, flattened or round, one closed, containing glycerin jelly coloured with picro-carmin—the standard equal to the colour of a dilution of average normal blood one hundred times (20 cmm. in 2 Cc.), and the other, graduated in 100 degrees = 2 Cc., for the dilution of the sample of blood with distilled water. The outfit further includes a pipette, pricker, india rubber stand, &c.

The lobe of the ear or the finger is pricked and 20 cmm. o blood are drawn up into the pipette, injected into the graduate tube, which should at the time contain a few drops of water t prevent possible coagulation and facilitate mixture. Water i then added sufficient to produce a tint the same as the standard the two being frequently compared during the process. Th degrees of dilution needed indicate the percentage amount c hæmoglobin. For example, 20 cmm. of blood from an anæmi patient giving the standard tint at 30 degrees of dilution woul contain only 30 per cent. of the normal quantity of hæmoglobin

Other Hæmoglobinometers are those of Oliver, Fleischl an Haldane.

Hæmoglobin Scale according to **Tallquist** consist of a tinted scale with strips of blotting paper to b sucked up with the blood for examination. The tint thu produced is compared by direct light with the scale. Th scale indicates 10, 20, 30, &c., up to 100. This refers t amount of hæmoglobin—100 being taken as normal.

Blood, Number of Corpuscles.—One cubic millimeter contains normally about 5,000,000 to 6,000,000 re corpuscles in man, and about 4,500,000 in woman. Th average number of white corpuscles per cubic millimeter i about 7,000 to 8,000 in adults, and 10,000 in children.

The hæmacytometers chiefly employed are Gowers' modification of Hayem's, and that of Thoma-Zeiss.

In the **Gowers Instrument** the cell is $\frac{1}{5}$ mm. deep and each side of a square is $\frac{1}{10}$ mm., hence the volume of th small square is $\frac{1}{500}$ cmm. This instrument contains, in addi tion to the cell, a small pipette which, when filled to the mar on its stem, holds exactly ·995 cmm., a capillary tub marked to contain exactly 5 cmm., a glass stirrer, a lance needle, &c. The dilution employed is 1 to 200. The numbe of corpuscles in 10 squares is counted, and this multiplied b 10,000 gives the number in a cubic millimeter. The abov dilution and squares are so arranged that normal bloo presents 50 corpuscles per square, or 100 in 2 squares; and b counting 10 squares so as to get the average for two, th *percentage* of corpuscles to that of health is evident, and ma be compared with the percentage of hæmoglobin as ascertaine by Sir Wm. R. Gowers' hæmoglobinometer, *v.p.*597.

If, for instance, the blood contain 80 per cent. of corpuscle and only 40 per cent. hæmoglobin, the value of each corpuscl is represented by the fraction ½. Sometimes in perniciou anæmia the corpuscles sink below the amount of hæmoglobin and there may be 30 per cent. of corpuscles and 40 per cent. c hæmoglobin, in which case the value of the corpuscle is $\frac{4}{3}$ The corpuscles having settled, and the percentage ascertained the objective may be raised so that the corpuscles are some what out of focus, the **leucocytes** then appear as brigh points, in consequence of their greater refraction, and thei number may be counted. Sir Wm. R. Gowers prefers thi method to that of staining (*v.p.*599).

The **Thoma-Zeiss** instrument consists of micromete slide divided into 16 squares, each square again divide into 16 smaller squares. It has two pipettes, one fo diluting the blood 1 to 100 and 1 to 200 for counting th red corpuscles, the other is intended for estimation of the leucocytes, and dilutes the blood 10 or 20 times. The number of red corpuscles seen in 4, 6, or if greater accuracy is required, 16 (larger) squares, *i.e.*, in 64, 96 or 256 smaller squares, is counted. To ascertain the **number of Red Corpuscles** in 1 cmm. of blood, knowing the volume of the cube standing on each small square to be $\frac{1}{4000}$ cmm., *multiply the total number of red corpuscles counted by 4,000 times the number of times of dilution of the blood and divide the result by the number of small squares in which red corpuscles have been counted.* It is always desirable to have an assistant to note the numbers observed, and to count the corpuscles touching and overlapping the two adjacent boundary lines on the left upper corners of the squares, but those on or overlapping the other two sides are excluded to compensate.

The normal dilution is 1 to 200; in polyemia 1 to 400; and in excessive anæmia 1 to 100 may be used. 5 or 6 corpuscles per square are a convenient number for counting.

The fluid used for diluting in both the above instruments is **Sir Wm. R. Gowers' Hæmacytometer Solution:** —Sodium Sulphate 104 grains, Acetic Acid 1 drachm, Distilled Water 4 ounces. Filter.

Hayem's Solution is also employed. Sodium Chloride 2, Sodium Sulphate 5, Mercuric Perchloride 0·5, Water 200.

The number of Leucocytes may be estimated in a similar manner, but in this case it is desirable to stain them before counting by using Gowers' diluting fluid, with an appreciable addition of Löffler's Methylene Blue, or by Toison's Solution (Dissolve Methyl Violet 5B 0·25 Gm. in a mixture of Glycerin 30 Cc. and Water 80 Cc. Dissolve separately Sodium Sulphate 8 Gm. with Sodium Chloride 1 Gm. in Water 80 Cc. Mix and filter.) Leucocytes stained violet, red corpuscles greenish. For accuracy count as many squares as possible.

Another method is to use an aqueous $\frac{1}{3}$ per cent. acetic acid solution as diluent, in this the red corpuscles become invisible while the leucocytes remain visible (Thoma-Zeiss).

The Thoma-Zeiss cell is $\frac{1}{10}$ mm. deep, and each side of a small square is $\frac{1}{20}$ mm., hence the above figure $\frac{1}{4000}$ cmm. as the volume of a small square.

In **Leucocytosis** the number of white corpuscles may be increased from the normal 7,000 or 8,000 up to 12,000, or even to as many as 1,000,000 per cubic mm.—L. i./03,361.

The **Red Corpuscles** are normally fairly uniform in size and shape, but altered in both of these in disease. The varieties of the red corpuscles are:—The normal corpuscles (erythrocytes), the small red corpuscles (microcytes), the large red corpuscles (macrocytes), the normal sized nucleated cells (normoblasts or erythroblasts), small sized nucleated cells (microblasts), large sized nucleated cells (megaloblasts), extra large nucleated cells (gigantoblasts), those staining irregularly (polychromatophilic), and those altered in shape (poikilocytes).

The **White Corpuscles** in health are composed of polymorphonuclear leucocytes 70 to 72 per cent., small lymphocytes 22 to 25 per cent., large mononuclear leucocytes (or large lymphocytes or hyaline cells) 1 per cent., coarsely granular eosinophiles 2 to 4 per cent., transitional 2 to 3 per cent., mast- or basophile cells 0·5 per cent. Myelocytes are present in leukæmia, but not in health.—L. i./03,360. B.M.J. i./03, 314.

A new method of blood-counting producing permanent preparations which may be used subsequently. Eliminates ruled counting chamber and error due to variations in the depth of cells.—B.M.J. ii./03,74.

Blood Staining. Smear clean coverslips with a small drop of blood to be examined. Fix by heat, or by immersing half an hour in a mixture of equal volumes of alcohol and ether.

Stain by A. (i.) Five per cent. Aqueous Eosin 5 to 10 mins. stains the red corpuscles copper coloured, then
(ii.) Loeffler's Alkaline Methylene Blue for a few seconds.
or B. By the Ehrlich - Biondi - Heidenhain Stain (*v.p.*601).

Jenner's Stain is also to be strongly recommended. It may be prepared by mixing freshly 100 Cc. 0·5 per cent. Solution of Medicinal Methylene Blue with 125 Cc. of a 0·5 Solution of Eosin (water soluble, yellow shade).

Should be kept in stoppered bottles well closed, and is best recently prepared. The Methylene Blue and Eosin are said to combine, forming a chemical compound. In staining it is important to cover with a watch glass to prevent evaporation of the Methyl Alcohol.—L. i./99,370.

Romanowsky's Stain, Leishman's Modification.—There are various modes of making and supplying this stain. The following as suggested by **Leishman** gives the best results:—

This is a solution in pure Methyl Alcohol of an Eosin-Methylene-Blue-precipitation-compound, 0·15 grammes of the compound being dissolved in 100 Cc. of Methyl Alcohol. The solution thus formed is a clear dark blue liquid, showing a green iridescence by reflected light. The Stain is used by preparing films of blood in the usual way on clean cover glasses, and allowing to dry in the air. The films should be as thin as possible. Three or four drops of the Stain are dropped on to the film and the cover glass is rotated, no attempt being made to check evaporation as in the case of Jenner's Stain. After about half a minute six or eight drops of water are added, and allowed to mix by rotating with the Stain, and staining is allowed to proceed for five minutes; in certain cases ten minutes may be necessary. The film is now washed with distilled water, and a few drops of the water are allowed to remain on it for one minute. It is finally dried without heating, mounted in Xylol Balsam and examined with an oil immersion lense. The following results are obtained:—

Red Blood Corpuscles are stained pink or greenish.

Polymorphonuclear Leucocytes red. Nuclear network red. Extra-nuclear protoplasm colourless. Fine eosinophile granules red.

Mononuclears or hyaline, or large lymphocytes.—Nuclei red with sharp outline. Extra-nuclear protoplasm blue, occasionally showing red granules.

Transitional.—Identical with large mononuclears, except that nucleus is reniform.

SMALL LYMPHOCYTES the same as mononuclears, except that nuclei are more deeply stained.

COARSELY GRANULAR EOSINOPHILES.—Nucleus red but not so deeply stained. Granules pink.

BASOPHILES. Granules deep-stained purple black. Nucleus red but usually somewhat masked by granules overlaying it.

NUCLEATED RED CELLS.—Nucleus almost black with sharp outline. Extra-nuclear portion, grey.

MYELOCYTES stain pale red.

BLOOD PLATES deep red with spiky margins, frequently with pale blue peripheral zone.

BACILLI and MICROCOCCI blue.

MALARIAL PARASITES.—Body stains blue and its chromatin deep red.—B.M.J. i./01,635 ; ii. 01,757.

Vide also *p.* 622 for Malarial Stains.

Ehrlich - Biondi Stain. *Syn.* EHRLICH - BIONDI-HEIDENHAIN MIXTURE, EHRLICH'S TRIPLE STAIN.

This nuclear stain is prepared by dissolving separately Methyl Green 1 Gm. in water 200 Cc., Acid Fuchsin 1 Gm. in water 80 Cc. Orange G. 4 gm. in water 400 Cc., and mixing afterwards. The stain is then ready for use; it is *not* to be further diluted. Sections should be allowed to stain from 6 to 24 hours. Dehydration is effected with Alcohol, and the sections are cleared with Xylol, and mounted in Xylol Balsam. This should be distinguished from

Ehrlich's Triacid Stain.

Orange G. saturated aqueous solution 12, Acid Fuchsin saturated aqueous solution 8, Methyl Green saturated aqueous solution 10, water 30, absolute Alcohol 18, Glycerin 5.

The former of these two stains is the more used. The Triacid Stain appears to be more powerful, but is perhaps less delicate.

Ehrlich's Hæmatoxylin Solution.

Dissolve Hæmatoxylin 1·5 gm. in Alcohol Absolute 100 Cc., and mix the solution with a 100 Cc. of saturated solution of Ammonia Alum in water to which has been added Glacial Acetic Acid 5 Cc. and Glycerin 100 Cc.

Ehrlich's Acidophilous Mixture consists of Eosin 1, Indulin 1, Aurantia 1 in Glycerin 15.

Grenacher's Alum Carmine. Carmine 1, Alum 5, water 100. A small amount of Phenol may be added to preserve. For nuclei and muscle staining.

Grenacher's Hæmatoxylin Solution.

Dissolve Ammonia Alum 45 in water 430. Dissolve separately Hæmatoxylin 2·4 in absolute Alcohol 12. Mix and allow to stand 14 days. Filter and add Glycerin 66 and Alcohol 90 per cent. 75 Cc.

Delafield's Hæmatoxylin Solution is similar.

Mayer's Borax Carmine. This solution is prepared by boiling Alcohol, 70 per cent. with Carmine and Borax in excess, and filtering after cooling.

Mayer's Carmalum. Carmine 2, Alum 5, boil 1 hour with water 100, filter.

Mayer's Hæmalum.—Hæmatein 1, dissolved in Alcohol absolute 50. Mix this solution with one of Alum 50, in water 1,000.

Mayer's Acid Hæmalum consists of the above, with 2 per cent. Acetic Acid added.

Mayer's Hæmatoxylin or Kleinenberg's Hæmatoxylin Solution. To a saturated 70 per cent. Alcohol Solution of Alum and Calcium Chloride, diluted with 6 times the amount of Alcohol of the same strength, is added Alcoholic Solution of Hæmatoxylin, until the characteristic violet colour is produced.

Mayer's Paracarmine.—Carminic Acid 1, Aluminium Chloride 0.5, Calcium Chloride 4, in Alcohol 70 per cent., 100.

Mayer's Picrocarmine. Saturated Picric Acid solution is added to a solution of Carmin 8 Gm., in 100 Cc. of Ammonia until a precipitate commences to form.

Van Gieson's Stain. Saturated aqueous Acid Fuchsin solution 2, saturated Picric Acid solution 100.

Creatinine.

To detect this body add a little Sodium Nitro-Prusside and Caustic Soda. A red colour developes which fades on boiling the mixture. If a little Acetic Acid be added to the boiling liquid, Prussian Blue is produced.

Glucose Tests.

Diabetic and non-diabetic glycosuria, *i.e.*, the dangerous disease diabetes in which oxybutyric acid (*v. p.* 593) and its derivatives are passed, designated 'composite diabetes,' and in which coma may set in; and the relatively harmless alimentary glycosuria have to be distinguished. Five kinds of glycosuria are enumerated. —B.M.J. i./03,667.

Fehling's Solution, Solution of Potassio-Cupric Tartrate (*Off.*).

No. 1. Copper Sulphate 34·64, Sulphuric Acid 0·5, Distilled Water to 500.

No. 2. Sodium Hydroxide 77, Sodium Potassium Tartrate 176, Distilled Water to 500.

Mix equal volumes when required. Of this, 10 Cc. will be decolorised and reduced by 0·05 Gm. (or 53 minims = ¼ grain) of glucose or diabetic sugar in solution, with precipitation of yellowish red cuprous oxide, when the two are boiled together. No. 2 solution should not be kept in a very cold place, or it may crystallise. By keeping the copper solution separate from the alkaline solution the test is prevented from becoming erroneously sensitive.

The addition of a little (two teaspoonfuls for each analysis) precipitated Calcium Carbonate or Barium Sulphate throws down the cuprous oxide mechanically, and enables the colour of the supernatant liquor to be more easily seen.—L.i./03,1737.

Cupric Pellets,—the salts of Fehling's solution are prepared compressed into tablets.

Glass Capsules, containing about 1 Cc. of Fehling's Solution, are also prepared.

Glycuronic Acid, Uric Acid, Kreatinin, Pyrocatechin, Hydroquinone, Salicylic Acid Compounds, Chloral, Chloroform and similar bodies reduce Copper Solutions, these may be removed by simple repeated **filtration** through **animal charcoal.** None of these bodies **ferment** or give **Osazone Crystals** (*Vide* Phenyl hydrazin, 606).

Ammoniated Cupric Test (Pavy).

Tartarated Soda, and Caustic Potash, of each	178 grains.
Distilled water	*q.s.*
Dissolve and add in aqueous solution	
Copper Sulphate	36½ grains.
When cold add	
Strong Solution of Ammonia, sp. gr. 0·88 ...	6 ounces.
Distilled Water... ... ... to	1 pint.

This solution is not hyper-sensitive. Ammonia is a solvent for the cuprous oxide, yet it does not interfere with the reduction of the oxide in sugar testing. 10 Cc. of the solution further diluted are kept boiling in a flask, air being excluded, while the urine *q.s.* is added to discharge the colour; this solution is one-tenth the strength of Fehling's solution, 10 Cc. of it are equivalent to 0·005 Gm Glucose.

Glass Capsules containing 10 Cc. of this solution are prepared.

Fehling's Test, Allen's modification.—For small quantities of sugar in urine. Heat 8 Cc. of the urine to boiling point and add 5 Cc. of the copper solution, cool and add 2 Cc. saturated solution of sodium acetate, slightly acidified with acetic acid, to complete precipitation of uric acid, phosphates, and xanthine. Filter, add 5 Cc. of the alkaline solution, and boil for a few seconds. If more than 0·25 per cent. of sugar be present, cuprous oxide is precipitated before boiling point is reached, but if less than this proportion, it is deposited during cooling.—Analyst, xix.178 ; P.J. ii./95,307.

Barfoed's Reagent.—Neutral Copper Acetate 13·3, Acetic Acid solution (1 per cent.) 200. A Glucose solution warmed with a small quantity of this precipitates Cuprous Oxide.

Fermentation Test.—This test is simple and practically infallible. Prior to conducting, determine the specific gravity of the urine as exactly as possible. Then fill a Doremus tube completely with the specimen; place a little fresh yeast in the bend; keep in a moderately warm position for 24 hours. If sugar be present, carbon dioxide will be produced, and the gravity of the urine will fall—each degree of density lost being equivalent approximately to 1 grain of glucose per ounce.

Gerrard's Solution.

This is prepared by diluting a 100 Cc. mixed Fehling Solution with about 300 Cc. of water and almost decolourising, whilst boiling, with 5 per cent. solution of Potassium Cyanide (about 63 Cc. are required), and making up the volume when cold to 500 Cc.

For the Estimation of Sugar by this Process.—Mix 50 Cc. of the solution with 10 Cc. of mixed Fehling's Solution (5 Cc. Fehling's No. 1, and 5 Cc. Fehling's No 2). Boil in a basin and pour into it, whilst boiling, diluted urine, ½ to 1 Cc. at a time by means of a burette, until the blue colouration just disappears, taking care not to add an excess. An average diabetic urine may be diluted 1 with water to 10.

The calculation is then simple—as in the case of the Fehling method:—

The number of Cc. of actual undiluted urine used contains 0·05 Gm. of Glucose. From this the "percentage"—grammes per 100 Cc.—is easily obtained. To convert this into grains per fl. oz. multiply by 4·375. This quotient multiplied by 20 gives the number of grains of Glucose per pint.

The following table will be found useful:—

	No. of Cc. of diluted Urine used.	Gm. Sugar per 100 Cc.	Grains per fl. oz.	Grains per pint.
Urine diluted 1 with Water to 10	4·0	12·5	54·69	1093·80
	4·5	11·1	48·56	971·20
	5·0	10 0	43·75	875·00
	5·5	9·1	39·86	797·20
	6·0	8·3	36·35	727·00
	6·5	7·7	33·73	674·60
	7·0	7·1	31·10	622·00
	7·5	6·7	29·35	587·00
	8·0	6·3	27·59	551·80
	8·5	5·9	25·84	517·80
	9·0	5·6	24·97	499·40
	9·5	5·3	23·21	464·20
	10·0	5·0	21·90	438·00
	10·5	4·8	21·02	420·40
	11·0	4·5	19·71	394·20
	11·5	4·3	18·83	376·60
	12·0	4·2	18·40	368·00
	12·5	4·0	17·52	350·40
	13·0	3·8	16·61	332·20
	13·5	3·7	16·21	325·20
	14·0	3·6	15·77	314·40
	14·5	3·4	14·86	297·20

For less quantities of sugar a stronger dilution is recommended. The following gives the results with the urine diluted with an equal volume of water: —

	No. of Cc. of diluted Urine used.	Gm. Sugar per 100 Cc.	Grains per fl. oz.	Grains per pint.
Urine diluted 1 with Water to 2.	3·0	3·30	14·45	289·00
	3·5	2·90	12 70	254·00
	4·0	2·50	10·95	219·00
	4·5	2·20	9·64	192·80
	5·0	2·00	8·76	175·20
	5·5	1·80	7·88	157·60
	6·0	1·70	7·45	149·00
	6·5	1·50	6·57	131·40
	7·0	1·40	6·13	122·60
	7·5	1·30	5·69	113·80
	8·0	1·25	5·49	108·80
	8·5	1·18	5·17	103·40
	9·0	1·11	4·86	97.40
	9·5	1·05	4·60	92·00
	10·0	1·00	4·38	87·60
	10·5	0·95	4·15	83·00
	11·0	0·91	3·96	79·20
	11·5	0·87	3·81	76·20
	12·0	0·83	3·64	72·80
	12·5	0·80	3·50	70·00
	13·0	0·77	3·37	67·40
	13·5	0·74	3·24	64·80
	14·0	0·71	3·11	62·20
	14·5	0·69	3·09	61 80
	15·0	0·67	3·00	60·00

If the urine contains less sugar than this, it is desirable to use the urine in an undiluted condition.

The calculation is then as before: the number of Cc. of actual urine used contain 0:05 Gm. of Glucose.

Gowers' Test for roughly estimating glucose:—

Dilute with an equal volume of Liquor Potassæ, this makes all urine pale enough to prevent important error in such a rough test. Boil the upper half well but not too long—a lemon tint corresponds to about 5 grains per fluid ounce, a pale sherry to 10 grains, a dark sherry to 15 grains, and a port wine tint to 20 grains and upwards.

Johnson's Test.—*See* Picric Acid, p. 606.

Nitropropiol. Sodium Orthonitrophenylpropiolate.

Has long been used for detection of sugar in diabetic urine. Owing to reduction, indigo blue colour is produced, or indigo-blue itself precipitated. Recently tablets prepared. —C.D. i./00,29; L. i./00,471,882,1321; ii./01,1028; L. i./02,183.

Nylander's Reagent.

Bismuth Subnitrate 2, Rochelle Salt 4, Sodium Hydroxide Solution (8 per cent.) 100, and **Almen's** re-agent consisting of Bismuth Subnitrate 1, Rochelle Salt 2, Potassium Hydroxide Solution (35 per cent. strength) 50, are used for detecting Glucose. A small quantity of either warmed with the urine will blacken if glucose be present.

Phenyl-hydrazine Hydrochloride is used as a test for sugar. It is in colourless, shining, crystalline scales; and should be free from azo-compounds. A small quantity is warmed with twice its weight of sodium acetate in solution, an equal volume of the suspected solution added, and boiled for 20 minutes. On cooling, yellow crystals of phenyl-glucosazone are deposited if sugar be present.—B.M.J. i./01,453,454.

Picric Acid. JOHNSON'S TEST. This has been suggested as a test for glucose in urine, as a solution of this sugar, if boiled with Picric Acid and Solution of Potash, reduces the yellow Picric Acid to the deep red Picramic Acid forming Potassium Picramate, the depth of colour depending on the amount of sugar. By the aid of **Johnson's Picro-Saccharimeter** this reaction is made a quantitative test.

Safranine Solution.—1 in 1,000 One volume of this, with one of urine and one of liquor potassæ is heated to boiling, avoiding agitation. If the urine contain sugar to the extent of 0·1 per cent. the liquid will be decolorised. Each additional volume of the safranine solution that may be decolorised represents roughly 0·1 per cent. of sugar.—L. i./95,314.

Alkaptonuria (rare), due to presence of Di-oxy-phenyl-acetic Acid. Urine reduces Fehling and turns brown with alkali.

Glycerin.

Glycerin in the urine is claimed to be indicative of pancreatic disease and to result from the decomposition of fat. For the method of detection, which depends on the formation of crystals with phenyl-hydrazin, *vide* L.i./04,783.

Indican Test.

Indican may be detected by **Ehrlich's Test:** a Solution of 0·33 Gm. of Dimethyl-amidobenzaldehyde in water and strong Hydrochloric Acid of each 50 Cc.

Boil the urine with an equal quantity of this solution. Cool and render alkaline with Ammonia or weak Potash Solution. If Indican be present a red colour results.

Jaffe's Test.—Indican may also be detected by adding to the specimen an equal volume of strong Hydrochloric Acid, and adding drop by drop concentrated Liquor Calcis Chlorinata; blue coloration, due to Indigo, if Indican present, which may be taken up by shaking with Chloroform. If shaken with Ether this solvent will dissolve the Indigo-Red.

Purins.

Of the known Purin bodies, Xanthin, Hypoxanthin, Adenin, Guanin, Caffeine, Theobromine, are met with in food, and Uric Acid, Xanthin, and traces of Methylxanthin are found in urine. A purinometer has been designed for estimating.—L. i./03,899; ii./03,471.

Phosphates in Urine.

(Mean content is 0·15 to 0·2 per cent. P_2O_5).

These are estimated by means of a **Standard Uranium Nitrate Solution**, prepared by dissolving 35 Gm. of the Nitrate in 900 Cc. of water, and standardising it against 50 Cc. of a solution of 5·042 Gm. of pure Sodium Phosphate (*Off.*) in 1 litre of water; 5 Cc. of a solution of Sodium Acetate 100 Gm., with 100 Cc. of Acetic Acid in water *q.s.* to 1 litre is added, both in standardising and in the estimation of the sample of urine. A few small crystals of Potassium Ferrocyanide on a white tile serve as indicator, the Uranium Nitrate Solution being added to the *hot* Standard Phosphate Solution (or the specimen) until a drop removed by the aid of a rod commences to cause a brownish precipitate with them. This amount of the Uranium Nitrate Solution corresponds to 0·05 Gm. P_2O_5. The solution may either be diluted so that 10 Cc. shall be equivalent to this quantity (1 Cc. of the Uranium Solution = 0·005 Gm. P_2O_5), or better, its strength may be noted and verified from time to time; 50 Cc. of the urine is the quantity taken for examination, the conditions being the same as above.

Urea in Urine, Estimation of.

Average 2·5 to 3 per cent., or about (in health) 500 grains (33 Gm.) per diem ; it may range between 15 and 40 Gm. The majority of methods are based on the decomposition of Urea into nitrogen, carbon dioxide, and water, when treated with sodium hypobromite. The carbon dioxide is absorbed by the excess of alkali present, and the nitrogen can be measured, from which, on reference to tables, the percentage can be found—theoretically 1 Cc. of nitrogen at 0° C. = 0·0027 Gm. approximately of Urea. In the process about 8 per cent. of the total nitrogen is suppressed, but the increase in volume of the gas due to the room temperature (taken as 18° C.) and the vapour tension (the gas being measured moist) has been found to almost exactly compensate for this loss in practice.

For Sodium Hypobromite Solution, *v.p.*479.

A little Glucose added to a urine increases the evolution by preventing a secondary reaction—formation of Cyanates and Nitrates—but, as indicated above, this is compensated for.—B.M.J. i./03,194,288,341,403.

The **Doremus** form of Ureometer is graduated on the one side in decimal parts of a Gm. of Urea obtained from the 1 Cc. of Urine operated upon, and on the other, the figures 5, 10, 15, and intermediate ones indicate grains of Urea per fluid ounce.

A Portable **Urine Test Case** is arranged, containing the apparatus and reagents for the qualitative and approximate quantitative examination of urine for albumin, glucose and urea. — B.M.J. ii./99,1556 ; L. ii./99,1005 ; P.J. ii./99,344c.

A separate **Urea Apparatus** is also arranged.—C. & D. ii./01,835.

Uric Acid in Urine, Estimation of.

Uric Acid when pure is in white crystals, very slightly soluble in water, insoluble in alcohol and ether.

Heated to dryness on a water bath, with a little Nitric Acid or Potassium Chlorate and Hydrochloric Acid in a white dish, cooled, and a little Ammonia solution carefully added gives red colour.—The **Murexide Reaction.**

(Mean Content 0·05 to 0·06 per cent.) **Hopkins' Method.** To 100 Cc. of sample add about 30 Gm. Ammonium Chloride in powder, dissolve as completely as possible, or a small quantity may remain undissolved, add a little ammonia to neutralise and allow to stand 10 minutes. Filter off the precipitated

Acid Ammonium Urate, wash with saturated Ammonium Sulphate solution* and rinse off the precipitate from the filter with water to 100 Cc. Add 20 Cc. Concentrated Sulphuric Acid to raise temperature of the liquid to about 60°C., or, if necessary, warm to that temp. Titrate with $^{N}/_{20}$ Potassium Permanganate (1·578 Gm. in 1 litre), taking as end-reaction the point at which the Permanganate ceases to be instantly decolorised. Each Cc. of the Permanganate Solution=0·00375 Gm. Uric Acid.

The **Gowland-Hopkins' method** is as above to *, then proceed as follows:—Wash off the precipitate into a small beaker with a jet of hot water, add a little hydrochloric acid, and heat to just boiling. Allow to stand two hours in the cold. Collect the separated Uric Acid measuring the filtrate at the same time, for which an allowance of 1 mg. must be added on to the final result for every 15 Cc.; it need not exceed 20 to 30 Cc. Wash the uric acid crystals with a little distilled water, rinse off the filter with hot water, warm with sodium carbonate till dissolved and make up with water to 100 Cc. Add 20 Cc. Sulphuric Acid and titrate with Permanganate as above, adding slowly towards the end of the reaction, the finish being the first appearance of a pink colour which is permanent for an appreciable interval. Previously the disappearance of the colour is instantaneous. —P.J. i./99,236.

The acid Ammonium Urate may also be decomposed by means of Hypobromite.—L. ii. 93,471

Uric Acid Outfits are arranged containing Glass Tubes of Concentrated Permanganate Solution to produce extemporaneously 100 Cc. of $^{N}/_{20}$ Potassium Permanganate, and the other solutions and apparatus necessary for the entire estimation either by the Hopkins or the Gowland-Hopkins' method.

Acidity of Urine.

The **Acidity of Urine**, due mostly to the Sodium Acid Phosphate, is determined by titration with Decinormal Alkali using Phenolphthalein as indicator. Each Cc. of this standard solution = 0·012 Gm. of Sodium Acid Phosphate. Acidity is frequently reported in terms of the number of Cc. of this Alkali per 10 Cc. of Urine, *e.g.*, 3 Cc.=3°. The **Alkalinity** may be given in similar manner.

The nitrogenous compounds in Urine, (i) Uric Acid; (ii) Creatinine; (iii) Urea, may be fractionally precipitated by special reagents.—C.&D. i. 30,430.

WATER ANALYSIS NOTES.

Work in an atmosphere ammonia-free. The sample of Water should be received in a 'chemically clean' Winchester quart-stoppered bottle, and dated. Note **Physical Characters**, smell, taste, sediment, and colour in a 3 feet tube.

Total Solids are ascertained by evaporating the 100 Cc. in a platinum crucible on water-bath, the result being expressed in parts per million. The quantity being determined, it is essential that the amount of volatile and non-volatile matter should be determined, or, in other words, the amount of organic and inorganic solids, or those that will disappear on ignition and those that will not. Also notice the appearance on ignition, *i.e.*, charring (indicating organic matter), fuming, scintillation &c.

Free and Albuminoid Ammonia.—Prepare some water, NH_3 free, by acidulating some good tap water with Sulphuric Acid, about 2 drops of a 1 in 3 solution to a litre o water and distilling. By so doing (the retort and condense being chemically clean) even the first drop of distillate i Ammonia-free. Distillation may proceed, but must not b pushed too far. The distillate should be Nesslerised to verif its purity. Distil 500 Cc. of sample in a boiling flask wit rubber cork to connect with condenser. Nesslerise each 50 Cc of distillate with standard NH_4Cl. of which 1 Cc.=0·01 mg. NH_3. Add together the equivalent quantities of NH_3 an double the result to arrive at number of mgrs. of **Free Ammonia** per litre=parts per million. Stop distilling an add 50 Cc. of a solution of 0·4 Gm. Potassium Perman ganate and 10 Gm. Potassium Hydrate which has been freshl boiled 20 minutes. Distil again and Nesslerise the **Albuminoid Ammonia** in 50 Cc. of the distillate at a tim until it is NH_3 free. Add the equivalents together an double as above for parts per million.

Wanklyn divides waters into the following:—

Class I. Of extraordinary purity, yielding from 0·00 to 0·0 parts per million of Albuminoid Ammonia, which cannot b objected to organically. Class II. The general drinking water of this country, containing 0·05 to 0·10 parts Albuminoi Ammonia per million—this amount may be considered saf organically. Class III. Dirty waters, yielding more than 0·1 parts of Albuminoid Ammonia per million.

Nessler's Reagent for Ammonia (*Off.*).—*Sy*

SOLUTION OF POTASSIO-MERCURIC IODIDE.

Dissolve Potassium Iodide 7 and Mercuric Chloride 2½, i Distilled Water 160. To this add more of the Mercuri Chloride in solution until the precipitate no longer disappear on well stirring, and a slight permanent precipitate remain Then add Sodium Hydroxide 24, dissolve, add a little mor solution of Mercuric Chloride and Distilled Water *q.s.* to 20

On the addition of this test to ammonia or an ammoniu salt in solution, it lets fall a brown precipitate of Oxy-d Mercuric-ammonium Iodide.

Chlorine. Titrate 100 Cc. in a white basin with standar $AgNO_3$ of which 1 Cc.=1 mgrm. of Chlorine, using potassiu chromate as indicator. The reagents must be Cl-free and th water must not have an acid reaction.

Nitrites. To 100 Cc. of the sample add a weak, slightl acidulated, colourless solution of Meta-phenylenediamin Nitrites give an amber to mahogany colour according to th amount. Conduct a control experiment.

Nitrates. The test employed is to mix 1 part of saturat solution of a Brucine Salt with 3 parts of the specimen, a to 'layer' beneath this carefully 1 part of pure Sulphur Acid—a pink coloration indicates their presence.

Total Hardness.—To 100 Cc. of specimen add the least amount of soap solution (standardised so that 1 Cc.=1 mgrm. Calcium Carbonate or its equivalent) that will give a lather which will have an unbroken surface at the end of 5 minutes. 1 Cc. of the soap solution must be deducted from the amount required, as 100 Cc. of Distilled Water would require 1 Cc. to furnish a lather. The number of Cc. of soap solution required gives the number of mgrm. of Calcium Carbonate in the 100 Cc. of the specimen or the parts per 100,000.

Poisonous Metals.—Concentrate the water 5 times after acidulating with two drops of Hydrochloric Acid. Add Ammonium Sulphydrate solution. A darkening indicates Pb, Cu, or Fe, but not Zn. This darkened water should be divided into two parts. To one add Hydrochloric Acid—if darkness goes Fe is present. To the other portion add Potassium Cyanide Solution. If darkness goes now the metal is Cu; if it does not, it must be Pb. This latter proceeding is, of course, only necessary when the darkness does not go with Hydrochloric Acid. Confirmatory tests should always be employed. The confirmatory test for Fe and Cu is, to some original concentrated water in a test tube add Hydrochloric Acid and Potassium Ferrocyanide; a blue results with Fe, and a bronze with Cu. For Pb the Potassium Chromate test is employed. Zn gives a white precipitate with Ammonium Sulphydrate, and a white precipitate with Hydrochloric Acid and Potassium Ferrocyanide.

Phosphates should be tested for with 'Molybdic Solution'; a yellow colour and precipitate ensues after 15 minutes if phosphates are present.

CARBON MONOXIDE AND DIOXIDE TESTS.

Frequent deaths have recently occurred from Carbon Monoxide poisoning. Ordinary Coal Gas and Carbon Dioxide are also sources of danger.

Illuminating gas until recently consisted of Methane Marsh Gas) 42 per cent., Hydrogen 36 per cent., Carbon Monoxide about 10 per cent., Heavy Hydrocarbons 10 per cent., with Nitrogen, Carbon Dioxide and ulphuretted Hydrogen as impurities, and was obtained nly from coal. The Ethylene (Olefiant Gas) and other Hydrocarbons are responsible for the lighting effects, whereas the Methane, Hydrogen and Carbon Monoxide re diluents. Of late years, however, gas companies ave made more and more use of Water Gas produced y passing steam over red hot coke; this consists of bout 40 per cent. of Carbon Monoxide, and 60 per cent. of Hydrogen. Varying amounts from 5 to 50 per cent. of Water Gas have recently been used as an addition to Coal Gas for illuminating purposes.

The following test will indicate one part of Carbo Monoxide in 10,000 parts of atmospheric air. Eve $\frac{1}{4}$ to $\frac{1}{2}$ per cent. of the gas is most injurious, and i inhaled for some time may be fatal (Schmidt).—

10 to 20 litres of air are aspirated for about 15 or 2 minutes through 10 Cc. blood (fresh) diluted, 1 to 1 with water. The blood is then heated to the boilin point in a flask, and a current of air is passed into i which has previously passed through a solution of Palladium Chloride. The air, which passes out of the blood is then led into bottles containing Lead Acetate Solution diluted Sulphuric Acid, and another quantity of dilute Palladium Chloride solution, one after another in thi order.

The presence of Carbon Monoxide in the air unde examination is proved by the deposition of reduce Palladium metal in the last mentioned Palladiu Chloride solution. A quantitative method on thi principle is based on the fact that 106 parts of Palladiu thus deposited are equivalent to 28 parts of Carbo Monoxide.

Note.—The blood used for the absorption of th Carbon Monoxide, as above mentioned, is to be heate immediately after the aspiration with the air unde examination, and the passing of the air is to be continued three or four hours.

The gas may also be detected by the aid of th spectroscope. A little diluted fresh normal blood i shaken with the air to be examined. The haemoglobi combines with the Carbon Monoxide, and the liqui shows spectroscopically two black absorption band which correspond almost exactly with those of ordinar blood. But whereas this latter on addition of a littl colourless Ammonium Sulphydrate Solution leaves onl one band visible, occupying a position between the tw referred to, the blood combined with Carbon Monoxid is not affected by this addition—it shows the two band even for several days.

Death from Carbon Monoxide due to imperfect stove —L. i./03,258.

Carbon Monoxide is by some considered to be th cause of the injurious effects of tobacco smoking.— L. i./04,394.

Carbon Dioxide.—Haldane's apparatus for th estimation of this in the atmosphere has been recommended by a Departmental Committee inquiring into the ventilation of factories and workshops. The amount of air examined is 25 Cc., the process depending on absorption by a Volumetric Soda solution and ultimate titration. The Committee recommended that the amount of Carbonic Acid shall not exceed 12 volumes per 10,000, or 20 volumes where gas or oil is used for lighting purposes.

The statutory allowance of air to each person is 250 cubic feet.—L. i./03,464.

Nickel Carbonyl, causing degeneration of certain parts of the nervous system, produced three deaths.—L. i./03,269,1842.

Antidote.—Oxygen.

For treatment of persons who have inhaled these noxious gases, fresh air, sulphur baths, good food with Quinine and Nux Vomica, Chloroform Liniment with friction for local neuralgia and commencing neuritis.—L. i./03,337; ii./03,117.

II.—EXAMINATION OF STOMACH CONTENTS.

An **Outfit** is arranged containing the necessary **Reagents** and **Apparatus**. The **Reagents** include Blue Litmus Paper, Congo Red (an anilin colour turned blue by acids and red by alkali, the reverse of Litmus, indicates absence of Hydrochloric Acid in the stomach in cases of cancer, as weak Lactic Acid does not interfere), Benzopurpurin Paper, Alizarin Solution, Dimethyl-amido-azobenzol Paper and Solution (an cid and alkali indicator which is not affected by Carbon Dioxide—a 1 in 500 Alcoholic Solution of the compound is used n ordinary chemical testing), Decinormal Soda Solution, Ether, Caustic Potash Solution, Phenolphthalein Solution (*Off.* 1 in Alcohol 90 per cent., 300 with Distilled Water to 00, is reddened by alkali but is not suitable for ammonia stimation), Cupric Sulphate Solution, Lugol's Solution, Methyl Green and Methyl Violet and other Test Solutions.

The **Stomach Tube** should have bevel-edged eyes, nown as "velvet eye." Van Valsah's tube is recommended y Herschell.* In this the smaller eye of the two should be n a level with and opposite the upper border of the other; his arrangement prevents possible blocking of the tube and njuring the lining of the stomach.

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* Manual of Intragastric Technique. G. Herschell, M.D. 903.

Glycerin Jelly Lubricant, Aseptic, is supplie in 'collapsubes' for assisting the passage of tubes. Glyco-gelatin Pastil of Menthol, gr. $\frac{1}{12}$, with Cocaine Hydrc chloride $\frac{1}{20}$ grain, is also useful to be sucked just before usin the tube.

Inflation of the stomach for diagnosti purposes is best carried out by the double bellows of spray apparatus attached to a stomach tube.

Other methods of inflation are by giving first Tartaric Aci 30 to 90 grains in water, followed immediately by 40 to 1 grains of Sodium Bicarbonate, and Auto-inflation by means Spivate's tube.

Portions of stomach contents are remove to examine for acidity, to ascertain the presence of foo mucus or gastric secretion, when it should normally be empt to examine test meals and to search for pus, blood an bacteria.

Dunham's Tassel consists of a little tassel of thre soaked in Dimethyl-amido-azobenzol Solution. It is attache to a thread, the patient swallows it, it is removed after a interval, and the resulting colour gives the condition of t stomach as regards free Hydrochloric Acid.

Turck's Capsule consists of a Planten Capsule, No. 0 enclosing a small rubber tube attached to a thread for wit drawing, and provided with strips of Congo Red, Blue Litm and Dimethyl-amido-azobenzol papers; after swallowing a withdrawing, the resulting colours will be :—

1. If stomach contents neutral, no change in colour of a of the Papers.
2. If no free acid, but only combined acid and acid salt the Litmus will be red and the others unaltered.
3. If there be free organic acid, but no free Hydrochlo Acid, the Congo Red will be blackish blue, but t Dimethyl-amido-azobenzol Paper will be unchanged
4. If free Hydrochloric Acid present, all the Papers w be changed—the Litmus red, the Congo Red blue, a the Dimethyl-amido-azobenzol Paper will be red.
5. If both Hydrochloric and Lactic Acid be present, t Congo Red Paper will not be pure blue, but have blackish tinge.

The little rubber tube will contain sufficient material for microscopic examination, *e.g.*, for the Oppler Boas Bacillus Sarcinæ.

By means of **Einhorn's (silver) Stomach Buck** a small quantity, about 2 Cc., may be lifted up out of t stomach and examined. By **Salzer's** method a small quanti may be pipetted out of the stomach with a stomach tube. **Turck's Aspirator Bottle,** which is exhausted by mea of a bulb, the stomach contents flow into the bottle. This one of the simplest methods of removing stomach contents.

The **Water Test** for Myasthenia consists in introduci into the stomach 300 Cc. of water first thing in the morni fasting, and 1½ hours afterwards another 100 Cc. containi 1 per cent. of glucose. In due course a small quantity the stomach contents are removed and the sugar estimat

. *pp.* 604 and 605), from which is determined the amount he original 300 Cc. remaining in the stomach.

Ewald's Test Breakfast consists of two or three unces of dry bread and 10 ounces of hot water, or weak tea ithout milk or sugar. The Lactic Acid in bread vitiates ne results where the presence of this acid is of importance, s in the early stages of cancer.

Boas's Test Breakfast (given after lavage) consists of ne full tablespoonful of oatmeal to a quart of water, reduced a pint by boiling. There are a variety of other test (meat id bread) meals.

Examination of stomach contents after 'est Meals (for diagnosis, vide Herschell's Manual).

Microscopic Examination reveals starch, sarcinæ id the **Oppler Boas Bacillus**, present in malignant sease—this is best stained with Methylene Blue.

Chemical examination for acidity with Litmus aper, which is affected by Hydrochloric, Lactic and Butyric cids, Congo Red Paper, as already stated—the colour caused v organic acids will disappear on warming over spirit lamp hilst that due to Hydrochloric Acid remains.

Günzburg's test for free Hydrochloric Acid is pparently not reliable for Vomit, as by decomposition of odium chloride, and other salts, Hydrochloric Acid is volved by heat. Its use should therefore be restricted to the wald test breakfast. Its composition is:—

Phloroglucin 2 Gm., Vanillin 1 Gm., Alcohol 90 per cent.,) Gm. A rose red colour formed on warming a few drops ith an equal amount of the specimen in a porcelain dish inicates presence of the Acid.[*]

Herschell states that Günzburg's test is best kept in powder rm—2 parts of Phloroglucin and 1 part of Vanillin. As uch as will lie on the point of a penknife, added to a few ops of alcohol, forms a perfectly reliable solution.

Dimethyl-amido-azobenzol in the form of test paper reliable, turning red with a trace of Hydrochloric Acid.

Methyl Violet turns green with excess of Acid.

Benzopurpurin, dark red colour changes to light violet.

For **Lactic Acid**, Uffelman's Test is not satisfactory.

Distil off 30 Cc. from 40 Cc. of the filtered stomach contents e total acidity of which is known. The volatile acids go er; the residue contains the Lactic and Hydrochloric Acids. ie acidity of the distillate (found by titration with $\frac{N}{10}$ Soda, using Phthalein as indicator) deducted from the total acidity "A" (found by titrating 10 Cc. of the filtered stomach contents in the same manner, the result being expressed in terms of Hydrochloric Acid) gives the amount of Lactic and Hydrochloric Acids together. If the amount of HCl "H" (found in the same way as "A," but using Dimethyl-amido-azobenzol as indicator) be deducted from this, the remainder is Lactic Acid.

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[*] **Tropaeoline 00** and Methyl Orange (Helianthin) fficial Solution, Methyl Orange 0·4, Alcohol (90 per cent., , water to 200, are yellow colours used for testing for the esence of free acids. The former is changed to crimson by ids, the latter to pink, but no change is produced by Carbon ioxide, Acid Carbonates or Metallic Salts.

Günzberg's Capsule, for testing digestive power, nsists of $\frac{5}{16}$ inch of thin rubber tubing, $\frac{1}{8}$ inch in diameter, ntaining 1½ gr. Potassium Iodide plugged with pledgets of ibrin at each end.

Acetic and Butyric Acids are detected by smell. The amounts of combined HCl. is designated "C" and the organic acid "O." (See Herschell.)

The free Hydrochloric Acid may also be determined by estimating (with a Saccharimeter or Polariscope) the inversion of a cane sugar solution added to the filtered stomach contents.—L. ii./03,315.

Test for the products of **Starch Digestion.** The presence of Erythrodextrin in any quantity (giving a brown colour with Lugol's Solution) one hour after a test breakfast will point to hypochlorhydria.

Rennin is tested for by adding a few drops of the filtered and neutralised stomach contents to two or three Cc. of milk and maintaining the mixture at 98° F. for a quarter of an hour resulting coagulation indicates presence.

For testing for **Rennin Zymogen,** a small quantity of Calcium Chloride is added prior to incubation. A pocket incubator may be used for these experiments.

Mucus normally is stained faintly, but that met with in chronic gastritis deeply with Methyl Green.

Blood is recognised microscopically.

Fermentation is examined by means of an ordinary Doremus Ureometer.

Estimation of the **digestive power** of the gastric juice is effected with hard boiled egg in the **pocket incubator** by examining for peptone after two hours or so.

Keratin Coated Planten's Capsules (larges size), filled with **Bismuth Carbonate,** and **Chain Cachets** (2 inches of fine silver chain in a cachet attached to a piece of silk), are used for **X Ray examination** o the stomach.

For **Lavage,** a stomach tube, funnel, and graduated jug may be used; or a three-way tap or the Leube-Rosentha apparatus with Y tube, especially for autolavage.

III.—BACTERIOLOGICAL NOTES.

[A cabinet has been arranged containing the apparatus stains and solutions necessary for taking and examining **Diphtheritic** Scrapings, for detecting the **Gonococcus** in discharge, for staining Sputum for **B. tuberculosis** for collecting Blood for **Widal's Typhoid Reaction** for the **Gram** separation of Organisms, and for all othe general clinical diagnoses.—B.M.J. ii./00,332; L. ii./00,1282.

Bacillus Diphtheriæ (Klebs-Löffler Bacillus—Th latest work leads to the opinion that this organism is of th nature of a Streptothrix). *Directions for collecting specimens*

—If a sterile swab is not at hand (with which is now supplied a convenient tongue depressor), a small piece of absorbent cotton wool (not medicated with an antiseptic) should be steamed, *e.g.*, at the mouth of a kettle, allowed to cool and rubbed over the membrane on the fauces of the patient and removed in a test tube or bottle which has been similarly sterilised. If possible a small portion of membrane should be detached in addition.

Films are prepared from the swabbing. Stain with alkaline methylene-blue or by Gram's method. Dry and mount in xylol balsam.

Recognition. — *B. diphtheriæ* may be distinguished from the other organisms which will probably be seen in large numbers by the following characteristics:—Irregularity in size and outline, straight or slightly curved, more or less clubbed at one or both ends, sometimes spindle shaped, or as curved wedges, occasionally irregularly segmented, rarely or never regular in outline. Parallel grouping and 'Chinese alphabet' characteristic. Stain irregularly. Show polar staining with methylene blue—this is the best stain to lemonstrate the metachromatic granules—and Gram's method, .*p.* 622. "Long, medium, and short forms exist. The elation between the long and short forms has not been ettled. Appears to be of clinical importance, for the irulence of the long variety is said to be greater, whilst the itality is somewhat less, than that of the short form." (Curtis's 'Essentials of Bacteriology.') **Cultivate on blood-serum**—fine cream-coloured growth in sixteen o twenty hours, film from the same stain with methylene blue, Neisser's or Gram's method. Cultivations should in all ases be made on blood-serum or glycerin agar before the esult of diagnosis can be positive. Further characteristics, — no spores, non motile. Form differs with culture medium.

Neisser's original method of staining the organsm :—

Stain ½ minute each (washing between with water) with

A. Methylene blue, 0·5 Gm.
Alcohol absolute, 10 Cc.
Distilled water, 475 Cc.
Glacial acetic acid, 25 Cc.
B. Bismark brown, 1 Gm.
Distilled water, 500 Cc.

ut altered in the length of time [which was 3 seconds with A. and 10 seconds with B. (B.M.J. i./03, 587) to 2 minutes ach], advocated for examining direct from the swab.—B.M.J. ii./01, 758.

The use of eosine solution instead of B. above gives good esults, working as follows:—

1. Make film in usual manner. 2. Stain with A. three ninutes, and without washing pour on Gram's iodine solution minute. 3. Wash in water and counterstain with eosin aqueous solution 3 minutes, wash dry and mount. This nethod was claimed to be diagnostic, but other organisms, .*g.*, B. proteus Zenkeri, B. cyanogenus, and various organsms found in water, give similar results. The metachromatic granules are stained blue, the rest of the bacillus is stained y the counterstain.

Loeffler-Neisser method advocated.—Stain with Loeffler's Alkaline Methylene Blue (*v.p.* 619) 3 to 4 seconds, afterwards with B. above. Good results direct from the swab.—L. i./03,92.

Two reputed pseudo-varieties; one described by Löffler, morphologically and in all respects similar to the Klebs-Löffler organism, but non-virulent, the other by Von Hoffman shortly after the latter—stains more regularly than the Klebs-Löffler bacillus, and usually showed no polar staining. "The existence of pseudo-varieties is not yet satisfactorily settled, though recently the 'pseudo' bacilli are thought to be modified Klebs-Löffler, though perhaps not always, as more than one species having the same morphology may exist."—*Trans. Brit. Inst. Prevent. Med.*, First Series 1897.

Discussion on the nature of the pseudo-bacillus; some authorities still claim it to be a modification of B. diphtheriæ, others say it has no connection.—L. ii./03,332.

Pathogenicity of true Diphtheria Bacillus compared with pseudo forms.

Five Cc. of a glucose-broth culture two days old with pseudo-diphtheria bacilli are not pathogenic to guinea pigs, whereas ½ Cc. of a similar culture of true diphtheria bacilli usually kills in two days.

B. Xerosis occurring in xerosis conjunctivæ differs in the fact that primary cultures from the eye on blood serum first appear in 36 hours. Sub-cultures do not show this difference. The organism is non-pathogenic to guinea pigs.

Sections of Membrane.—Stain for the diphtheria bacillus by Eosin-Gram-Weigert method:—

1. Stain 4 or 5 min. with eosin solution. 2. Wash well in water. 3. Pass through a little alcohol. 4. Stain with anilin-gentian-violet, 10 min. 5. Cover with Gram's iodine solution, 3 min. 6. Decolorise with anilin oil. 7. Clear with xylol and mount in xylol balsam.

Micrococcus Gonorrhœæ.—Stain specimen with carbol-methylene blue or alkaline methylene blue 3 to 5 minutes, wash in water, dry and mount.

Recognition.—The cocci usually occur in pairs, occasionally in tetrads: in groups within the cells (Foulerton). They vary somewhat in size, and are somewhat ovoid, the opposed surfaces being flattened or even concave. Not stained by Gram's method, but by using an iodine solution three times the ordinary strength staining may be effected.

Jenner's Stain (*v. p.* 600) also gives excellent results.

Fraenkel's Pneumococcus.—1. Prepare films from 'rusty' portion of sputum. 2. Stain by Gram's method and counterstain with eosin half to one minute. Stain other films by carbol-fuchsin. Overstain (five minutes). Slightly decolorise with weak acetic acid. (For capsule.)

Recognition.—Diplococcus (free ends are often pointed—*Diplo lanceolatus*) sometimes occurs in short chains of four to ten cocci. Has a capsule. Stains by Gram's method.

MacConkey's capsule stain:—Dahlia 0·5 Gm., methyl green (00 crystals) 1·5 Gm. Mix with 100 Cc. distilled water and add saturated alcoholic fuchsin solution 10 Cc. and water *q.s.* to 200 Cc. Allow to stand two weeks before use—in the dark.

Stain 5 to 10 minutes. Wash well, dry, and mount in xylol balsam.

May be identified by its forming capsules in gelatin at 37° C. in one day —B.M.J.i./04,659.

Friedländer's Pneumobacillus.—Present in only small proportion of cases of pneumonia. Is not stained by Gram's method, but stains well by carbol-fuchsin.

Recognition.—A bacillus varying considerably in length; usually short, with rounded ends. Has a capsule. Is easily cultivated on all ordinary media.

Bacillus Tuberculosis. (Now viewed as a member of the Streptothrix group.) Ziehl-Neelsen's method.—Sputum and sections.—1. Prepare film from caseous particle of sputum or a section ready for staining, and fix by usual methods. 2. Boil filtered carbol fuchsin in a test-tube and cover specimens with it entirely; stain films 5 mins., sections 10 mins. (**Carbol-Fuchsin Solution**, Neelsen's Solution, is prepared by mixing Concentrated Alcoholic Fuchsin solution 1 with 5 per cent. Carbolic Acid Solution 9, slightly warmed.) 3. Wash well in water. 4. Decolorise almost completely by immersing in 25 per cent. sulphuric acid. 5. Wash well in water. 6. Counter-stain with **Loeffler's alkaline methylene blue**—sputum, 1 to 2 mins. sections, 3 to 4 mins. [This stain is prepared by mixing Concentrated Alcoholic Methylene blue solution 142 mins. with 1 ounce of a 1 in 10,000 solution of Caustic Potash. A 10 per cent. **Tannin Solution** in place of the Caustic Potash is found to be a better mordant (Pollard). **Carbolised Methylene Blue (Kühne)** is also employed.—Dissolve Methylene Blue 1, as much as possible in Alcohol 90 per cent. 7, and add Phenol Solution 5 per cent. 70, allow to settle and decant.] 7. Wash, dry, and mount in xylol balsam (sputum). 8. If section, dehydrate with alcohol, clarify with xylol, and mount in xylol balsam.

Gabbett's Stain.—i. *Fuchsin Solution.* Fuchsin 1, Absolute Alcohol 10, Phenol Solution (5 per cent.) 100. ii. *Methylene Blue Solution.* Methylene Blue 2, Pure Sulphuric Acid 25, Water 75. Stain 2 or 3 minutes with i. warm, then with ii. 1 or 2 mins. Wash, dry and mount in xylol balsam. The decolorising and contrast staining are done in one process.

Gibbes' Double Stain (Schenk's method of preparing) —Add Fuchsin 4 and Methylene Blue 2, in small portions a time to a solution of Anilin Oil 6 in Absolute Alcohol 30; when completely dissolved add water 30. Requires careful making.

Urine.—At least six films should be prepared. The specimen is centrifugalised, the supernatant liquor is poured off, and the sediment is washed two or three times by shaking up with sterile water, centrifugalising on each occasion. Stain as for sputum, but wash after 5 above in absolute alcohol. In taking sample wash glans penis, using a sterilised catheter if necessary, to ensure not getting any Smegma bacilli—the latter resist acids when decolorising, but differ from *Bacillus tuberculosis* as follows:—They are said to be slightly shorter and straighter, and also to be decolorised with absolute alcohol.

Recognition.—Delicate, straight, or more usually slightly curved rods. When stained, usually beaded in appearance. The length of the organism is commonly said to be about one-quarter to one-half the diameter of a red blood-corpuscle, but it varies considerably. Involution and branching forms occasionally met with.

Syphilis.—An organism is said to have been found. It is stated to be polymorphous, very motile and not stained by Gram's method. Agglutinates the serum of syphilitic subjects. C.D. ii./01, 150. As this lacks confirmation further details are unnecessary.

Bacillus Typhi abdominalis.

Widal's Reaction.—Collect sample of blood in a small capillary pipette, and seal the ends, that nearest the blood being closed first. By pricking the lobe of the ear or the finger the blood will run into the tube by capillarity. The serum is allowed to separate, or the tube is centrifugalised to cause as complete a separation as possible of corpuscles which may mask a reaction. The serum is blown out on to the corner of a slide and a platinum loopful is mixed with 9 loopfuls of normal saline solution, and one loopful of this 1 in 10 dilution is mixed with 2 loopfuls of typhoid broth, not more than 24 hours old, preferably filtered to free from scum which may be present. This 1 in 30 dilution is now examined as a hanging drop. A control experiment must be conducted in addition.

Positive Reaction.—Complete: Clumping of organisms and cessation of movement (as a rule in under 30 minutes, or may be instantaneous). Partial reaction: Sluggish movement, providing the control is actively motile. Negative reaction: No alteration in 1 hour. Dilutions 1 in 100 should give same results in 50 minutes; if the time exceeds this the diagnosis is doubtful.

The reaction may also be performed in similar dilutions in sealed capillary pipettes (Wright). This constitutes the macroscopic method of applying Widal's Reaction.

Wright describes some improvements in technique.—L. ii./03,214.

Notes of Caution in Applying.—Sometimes broth cultures 'clump' on their own account, the broth itself or a control with normal serum should always be examined. The serum of persons having previously had typhoid may react even years after. This may cause confusion where a typhoid diagnosis had not been given. Again, if only slightly diluted, *e.g.*, 1 in 10, normal serum frequently 'clumps,' which is not the case on further dilution,—1 in 30 or 50 is safest. Too *great* a dilution may obscure. The blood of *all* cases does not react, case may be too early (generally obtained about end of first week). Cases recorded where reaction intermits, absent one day, present next, and again recurs, and also a few described where there was no reaction throughout the disease, but these are fortunately very rare.—Clinical Journal, May 2, 1900.

A special culture should always be at hand—one known to re-act, as occasionally laboratory cultures do not respond.

The reaction is not considered positive (at Guy's Hospital) unless clumping and immobility occur with a 1 in 200 dilution within half an hour.—L. i./03,363.

On the value of Widal test in the typhoid of childhood.—B.M.J. ii./01,596.

Widal's test gave accurate results in 64 per cent. of cases. Failed in a few cases of enteric.—B.M.J. i./03,546; B.M.J. ii./01,1084.

A pathogenic organism other than *B. typhi abdominalis* may give the reaction, *e.g.*, according to Durham, *Gärtner's bacillus* when mixed with typhoid broth may react. If one drop of blood serum of a patient under infection with this organism (from eating unsound meat) be mixed with 9 of typhoid broth, a positive result may be obtained, but 1 in 100 dilution is negative.—B.M.J. i./98,1797.

As to the nature and causes of the reaction, the bacilli produce in the spleen and elsewhere toxins which, by their action on the tissues, particularly on the blood, cause certain hanges, apparently chemical in nature, giving to the blood and certain fluids this property of causing clumping and essation of movement when mixed with the typhoid bacilli.—Clinical Journal, May 2, 1900.

Recognition.—*B. typhi abdominalis* is about thrice as long as broad, with rounded ends, actively motile – flagella stained y McCrorie's, Van Ermengem's, or Pitfield's methods, are long and wavy, 12 to 16 in number, though films usually do not show more than 8 or 10, a large number of detached flagella being also visible. No indol production. Growth on potato translucent, in milk no coagulation, in glucose-gelatin no gas formation (differences from *B. coli*, of which at least 15 species have been described).

McCrorie's Stains.—Solution A. Night blue 1 in alcohol, absolute 20, alum 1 in water 20, Tannic acid 1 in water 20. Mix and filter at once. Solution B. Anilin Fuchsin. To 00 Cc. of saturated Anilin Water, add 10 Cc. of absolute alcohol and 1 Gm. of Fuchsin, or Carbol-Fuchsin diluted may be employed.

Van Ermengem's Stains.—A. 1 per cent Osmic Acid Soluion 100, Tannin 18, water 45. B. Silver Nitrate Soluion 0·25 to 0·5 per cent. C. Gallic Acid 1, Tannin 0·6, Sodium Acetate fused 3·3, water 70.

Pitfield's Method.—Solution A Tannin 1 Gm., Water 0 Cc. Do not filter. Solution B. Saturated aqueous solution of alum 10 Cc., saturated alcoholic Gentian Violet Solution, Cc. Filter and keep in a stoppered bottle. Fuchsin will nswer the same purpose as Gentian Violet. Equal parts of A and B mixed, heated to nearly boiling and employed to tain 1 to 3 minutes, wash in water, dry and mount.

Gärtner's bacillus thought to be a modification of *B. coli*, nd the above differences not always constant and even the gglutination test between *B. typhi abdominalis* and *B. coli* not lways reliable. Stab and shake cultures on agar containing ·3 per cent. glucose, stained with neutral red safranine istinguish, *B. coli* discharging it, probably because it is a trong reducing agent, producing a saffron tint with uorescence in 12 to 24 hours, but *B. typhi abdominalis* is ithout action on the red tint.—L. i./01,613; P.J. i./01,391.

B. coli communis is a normal and advantageous inhabitant f the intestine, but may become responsible for an attack of inflammation of the bowel or epidemics of food poisoning. —P.J. ii./03,740.

"Krystall Violett" and neutral red, advocated for distinguishing colonies of B. coli (coloured red) from those of B. typhi abdominalis (also B. enteritidis Gaertner, and others), coloured blue to purple. Medium contains Sodium taurocholate to inhibit growth of nearly all but intestinal bacteria. Lactose is another essential component of the medium, as B. coli and congeners decompose it with gas formation.—B.M.J. i./02,1473.

"Diazo" Test for Typhoid Fever (Ehrlich).

A. Hydrochloric (or Nitric) Acid 10, Water to 200, Sulphanilic Acid *q.s.* to saturate.

B. Sodium Nitrite 1, Water to 200.

For use, mix 200 of A with 5 of B (this must be done immediately before use), add to an equal volume of urine and render alkaline with strong ammonia.

The reaction is indicated by a red coloration; on shaking, a characteristic pink froth appears. After 12 to 36 hours a deposit is formed, the upper part being green or black.

This test is inserted for reference only—it is not regarded as specific for typhoid fever.

B. Enteritidis Sporogenes.—An anaërobic organism staining by Gram's method, spores only on blood serum (?), which it liquefies. Note on, found in the dejecta of the sufferers in the epidemic of diarrhœa at Bartholomew's Hospital in 1895. Detection of in water supplies.—P.J. ii./02,25.

Malarial Parasites.—Several varieties exist, classed as quotidian, tertian, quartan, according as liberation of spores into the circulation and the corresponding fever occur at 24, 48 and 72 hours respectively. These may be again classed into divisions according to severity of fever. Films of blood smeared evenly with a very small quantity *s.a.*, dried in the air, not by aid of a flame, and fixed by immersing in alcohol and ether, equal parts, 10 minutes, may be stained with aqueous methylene blue and eosin, or with methylene blue alone, 5 minutes, or with a Hæmatoxylin Stain, or by Leishman's Stain, see p. 601. Consult Manson on 'Malarial Fever,' vol. viii., Allbutt's *System of Medicine*. Muir & Ritchie, 'Manual,' Hewlett, 'Manual of Bacteriology,' 1902.

Gram's Method of differentiating Organisms in Film Preparations:—

1. Anilin-Gentian-Violet, 3—5 mins. 2. Without washing, Gram's solution ½ to 1 min. 3. Pour off Gram's solution, wash in water, rinse with alcohol, until no further colour comes away. 4. Wash in water. Dry. Mount in xylol balsam. 4a. If pus, after washing in water (4), counter-stain with Eosin 1 min. Wash. Dry. Mount.

Gram-Eosin Method for Sections.—1. Place a little alcohol on section ½ min. 2. Cover with filtered Anilin-Gentian-Violet 10 mins. 3. Gram's solution, 3 mins. 4. Decolorise in Alcohol. Wash in water. 5. Stain with Eosin 1—2 mins. Wash in water. 6. Dehydrate with Alcohol. 7. Clear with Xylol, mount in xylol balsam.

Eosin-Gram-Weigert Method.—Eosin (5 per cent. aqueous) 5 to 10 minutes. Wash in water. Anilin-Gentian Violet 10 minutes without washing. Gram's iodine solution, 3 minutes. Wash in water. Blot, dehydrate, and decolorise in anilin oil until pink colour returns. Clarify in xylol and mount in Xylol-balsam. This method is preferable to the Gram eosin method, as anilin oil is more gentle in decolorising action than the alcohol used in the latter.

A simple stain for sections is:—

Carbol-Thionin Blue.—Thionin blue, 0·65 Gm.; absolute alcohol, 3·5 Cc.; phenol solution, 5 per cent., 39 Cc.

Gram's solution has the formula:—Iodine, 1 Gm.; potassium iodide, 2 Gm.; water, 300 Cc.

NOTE.—Anilin-Gentian-Violet is prepared by adding 1 part of a concentrated alcoholic solution of the dye to 9 parts of a filtered saturated solution of anilin oil in water (solubility about 1 in 30). **Carbol-Gentian-violet** is the same, with 5 per cent. phenol solution in place of anilin water.

List of some pathogenic and common non-pathogenic organisms stained and not stained by Gram's method:—

A. STAINED.

Staphylococcus, all varieties.
Streptococcus pyogenes.
Micrococcus tetragenes.
Fraenkel's pneumococcus.
Bacillus anthracis.
,, diphtheriæ (Klebs-Löffler).
,, enteritidis (Klein)
,, pseudo-diphtheriæ.
,, xerosis.
,, tuberculosis.
,, lepræ.
,, tetani.
Sarcinæ, all varieties.
Yeasts (Blastomycetes).
Ringworm Fungi.
Streptothrix of Actinomycosis
,, of Madura disease.

B. NOT STAINED.

Gonococcus.
Diplococcus intracellularis meningitidis (Weichselbaum).
Bacillus mallei.
,, typhi abdominalis.
,, coli communis.
,, enteritidis (Gärtner)
,, pestis.
,, pyocyaneus
,, influenzæ.
,, Friedländer's Pneumo of
,, Malignant œdema —
,, of Symptomatic anthrax (Charbon).
,, prodigiosus.
,, proteus *var.*
,, fluorescens liq. and non-liq.
Spirillum choleræ Asiatic.
,, Metchinikovi.
,, Finkler and Prior

Semen Test.—The presence of semen may be detected by evaporating a drop of the liquid from the moistened stain, fixing it by a flame and staining with eosin and methyl green. At the base of the head of the spermatozoon is a hemispherical portion which stains green, while the anterior part and tail stain red. Some prefer the use of methyl green alone. Ehrlich's Hæmatoxylin (stain 5 minutes, wash in distilled water, then in tap water until blue, and counterstain with Eosin solution, 2 or 3 minutes), also gives good results.

Preparation of Sections before Staining.—Small pieces of the tissue to be examined for organisms may first be 'fixed'—*i.e.*, made permanent by soaking in a saturated solution of corrosive sublimate made with normal saline, or in the platino-aceto-osmic mixture of Hermann, or in one of numerous mixtures of this kind, for twelve, twenty-four, or more hours, according to the size of the tissue.

They are then hardened by immersing in alcohol, passing through gradually increasing strengths—*e.g.*, for twenty-four hours respectively in 30, 60, 90 per cent., and finally into absolute alcohol. (In urgent cases the tissue, if small, may often be transferred direct from the "fixer" to the absolute alcohol.) It is then placed in a mixture of equal parts of absolute alcohol and chloroform for twenty-four hours. From this it is removed to chloroform for four hours, thence to a mixture of paraffin (melting at 46·8° C.) and chloroform in a wide-mouthed stoppered bottle, and kept at 56° C. for four hours in an oven which can be maintained at this temperature. The tissue is then transferred to paraffin, and kept at the same temperature for twelve to sixteen hours. It is finally poured into a little box, *secundum artem*, covered with paraffin, allowed to set, and cut with a good microtome.

Tissues are also hardened with formalin, and may be imbedded in gum acacia, celloidin, etc.—but for bacteriological work the paraffin treatment is the one most recommended. The formalin and gum method is useful when the diagnosis is urgent.

Farrant's Mounting Medium.—Gum Acacia, best small, 32 ozs., wash well with 6 ozs. of water in two or three lots and dissolve in 40 ozs. of boiling water with constant stirring. Strain through muslin and add Arsenious Acid 1 drachm in Glycerin 40 ozs., heat gently to clarify.

Asphalt Solution for mounting purposes. Asphalt 2, Chloroform 3.

PREPARATION OF CULTURE-MEDIA.

Here may be mentioned the formulæ for preparing the commoner sterile bacteriological nutrient media.

Nutrient Broth.—The method preferable is:—Beef (or horse, &c., flesh) 450 Gm. freed from fat and minced, is extracted for twenty-four hours with cold water 1,000 Cc. The albumin is coagulated by heat and strained off. The resulting extract is boiled ten minutes with sodium chloride 5 Gm., and peptone (in powder) 10 Gm., with occasional shaking. Make faintly alkaline with dilute sodium carbonate solution, using litmus as indicator, and filter.

For filtering all media use a special tough thin French-grey paper. All media are used either neutral or faintly alkaline.

In place of above, a good meat extract may be used as the starting-point. Boil 5 Gm. of the extract, peptone 10 Gm., sodium chloride 5 Gm., water 1,000 Cc.; and finish as above. The broth thus prepared may be run into specially cleaned test-tubes, about 5 Cc. into each. These are now plugged and sterilised at 100° C. for a quarter of an hour on three successive days, or the broth may be converted into other nutrient media.

Standardisation. Broth thus, and the gelatin and agar media, made from it are acid to phenolphthalein, but are frequently neutral or even alkaline to litmus—this latter not being sensitive to many of the weak organic acids present in the meat extract. The medium is, therefore, standardised with $\frac{N}{10}$ soda in the presence of phenolphthalein. The re-action of a medium is usually expressed by the number of Cc. of normal alkali required to be added to 1 litre of medium to render it exactly neutral to phenolphthalein, *e.g.*, '+ 10' indicates that 10 Cc. of N soda have to be added to neutralise it. *This reaction has been found best for general bacterial growth, and is the standard employed.* The rule for standardising, therefore, is to subtract 10 from the number of Cc. of normal soda that must be added per litre; for example, if 10 Cc. of a medium require 1·2 Cc. of $\frac{N}{10}$ soda, then 1,000 Cc. = 12 Cc. $\frac{N}{1}$ soda. The medium is now neutral to phenolphthalein, but distinctly alkaline to litmus. Then subtracting 10 Cc. from 12 we have 2 Cc. of $\frac{N}{1}$ soda to be added to 1 litre of medium.

Glucose Broth consists of the above with the addition of 1 or 2 per cent. of pure anhydrous glucose added after final filtration, but prior to sterilisation.

A simple method of cultivating anaërobic organisms.—L. ii./03,1023.

Glycerin Broth.—Nutrient Broth containing 5 to 8 per cent. of Glycerin.

Litmus Broth consists of the addition of a sufficient quantity of Litmus solution to neutral broth to render it distinctly blue in colour.

Nutrient Gelatin.—Broth 1,000 Cc., gelatin 125 Gm. Melt in steamer, and clarify by adding the white of one egg, to which a little water may have been added, render faintly alkaline, place in steamer to make quite hot, and filter in the same, leaving the portion containing the coagulated albumin, which will have subsided, carefully until the last. Run the medium into tubes, about 5 and 8 Cc. into each according as to whether 'slopes' or 'stab' preparations are required. Sterilise on three successive days.

Glucose Gelatin consists of nutrient gelatin to which 1 or 2 per cent. glucose has been added after filtration. For the cultivation of anaërobic organisms and to observe gas formation. Must not be sterilised in the autoclave.

Nutrient Agar.—For this medium the following gives satisfactory results: Nutrient broth 1,000 Cc., powdered agar-agar 20 Gm. (passed through a drug-mill and made as fine as possible); melt in the steamer or better in an autoclave, allow to cool slightly, or, if time is an object, cool by shaking under a stream of cold water from the tap; add white of two eggs, make just alkaline, boil in the steamer or autoclave twenty minutes, and then transfer to a tall beaker; allow to get quite cold, remove the solid mass from the beaker, and cut off the bottom of the block of jelly containing the coagulated albumin and sediment. The remainder is again thoroughly melted in the autoclave or steamer, and will then filter well (in the steamer). It may be poured into tubes, and sterilised in the autoclave for a quarter of an hour under a pressure of at least two atmospheres—or, in the steamer on three successive days. Instead of cutting off the sediment on setting, it may be kept out by straining the hot liquid through butter-cloth previous to filtration.

N.B.—The white of egg should be added when the medium has almost set—*i.e.*, as cool as possible—as the albumen coagulates at 65° C. and it acts purely mechanically by carrying down with it the particles of suspended matter.

Blood Agar is prepared by streaking nutrient agar with blood drawn under the strictest aseptic precautions from the finger, or from a freshly-killed animal. It may be used in the 'slope' form or as plates. Neisser's gonococcus grows favourably on this medium.

Glucose Agar consists of nutrient agar to which 1 or 2 per cent. glucose has been added after filtration. In the upright form is used also for deep stab cultivations of anaërobic bacteria. Must not be sterilised in the autoclave.

Glycerin Agar is nutrient agar with the addition of 5 to 8 per cent. of glycerin. Is a satisfactory medium for the growth of *Bacillus diphtheriæ*, *B. tuberculosis* and *Streptothrix actinomycosis.*

Maltose Agar.—Maltose 12, Peptone (in powder) 3, Agar 3 9, Water 300. This is prepared in the customary manner, but the product is not neutralised. Blaxall's formula is Maltose 12, Peptone 1½, Agar 9, Water 300. For ringworm cultivation.

Peptone-water.—Peptone 10 Gm., sodium chloride 10 Gm., tap water 1,000 Cc.: boil in the steamer one hour, filter, and sterilise. Not necessary to render alkaline. Used for the production of the indol reaction as one of the aids, for example, to distinction (?) of *B. typhi abdominalis* and *B. coli.* It was originally utilised for cholera-diagnosis.

Potato.—Large specimens are thoroughly cleaned and cut into 'half cylinders' with a potato-borer. The brown peel is removed and the pieces soaked overnight in water to wash off excess of starch. Wide test-tubes (1 inch by 6 inches) are plugged and sterilised, and a little distilled water is placed with each half-cylinder in the tubes. The water prevents drying up in sterilising, which is effected by heating on three successive days. Must not be sterilised in the autoclave.

Milk.—The cream is skimmed from good cows' milk, and the resulting 'skimmed' milk sterilised in the steamer for ½ hour on three successive days.

May also be drawn direct by means of a catheter into sterile vessels with the strictest aseptic precautions. Organisms are said to grow better in this than in milk which has been heated.

Blood-serum.—The serum is separated from fresh blood obtained from the jugular vein of the sheep. It is centrifugalised and filtered through a sterile Chamberland filter. (The candle is heated in a muffle-furnace, or in a bright fire, if it has been previously used for the same purpose.) The filtrate may then be poured into sterile test-tubes, plugged—and inspissated, first at 80° C., then at 60° C., and the latter temperature is maintained eight to twelve hours, or more if necessary. The medium is finally tested after capping by incubating at 37° C. for twenty-four hours to ensure sterility.

SURGICAL DRESSINGS AND APPARATUS.

NOTE.—This does not claim to be an exhaustive list. A umber of articles which were not contained in the 10th dition are, however, briefly described, and to avoid repetion articles in this section are in great measure not mentioned the preceding pages or in the general index.

Abscess Needles for dental purposes have bent pointed ends of square transverse section.

Accouchement Sheets, Moss, 36 inches by 42 inches

Bandages.—The following are supplied in most instances of 6 yards length:—

Alembroth Gauze, 3, 4 and 5 inches wide.
Black Cloth, 1½, 2, 2½, and 3 inches wide.
Buttercloth, 1, 2, 2½, 3, 4, and 6 inches wide.
Calico, unbleached or bleached, 1, 2, 2½, 3, 4, and 6 inches wide.
"Cataract" of special shape are made for bandaging the eyes after this operation.
Carbolic Gauze, 5 inches wide.
Crêpe, Geneva, 1½, 2, 2½, and 3 inches wide.
,, Velpeau, 2, 2½, and 3½ inches wide, about.
Crinoline, for silicating and Plaster of Paris, 1, 2, 3 and 4 inches wide.
Cyanide Gauze, 2, 2½, 3, 3½, and 4 inches wide.
Domette, 2, 2½, 3, 4, 5, and 6 inches wide.
Elastic Circular Stocking, 2½, 3, and 4 inches (any length).
Elastic, India Rubber Webbing, 1, 2, and 3 inches wide.
Eucalyptus Gauze, 5 inches wide.
Flannel, 2½, 3, 4, and 5 inches wide.
Gauze, Plain, Absorbent, 4 inches wide.
"Ideal" (a special elastic bandage), 2½ and 3 inches wide.
Iodoform Gauze, 4 inches wide.
Muslin, Check, for Plaster of Paris, 2, 3, and 6 inches wide.
Open Wove, white absorbent, 1, 1½, 2, 2½, 3, 4, 5, and 6 inches wide.
Plaster of Paris, 2, 2½, and 3 inches wide. In air-tight containers.
Rubber are (1) webbed with strands of rubber (see Elastic above). (2) Statham's is porous. (3) Martin's (solid rubber) is perforated and non-perforated.
Selvedge white and grey, 2, 2½, 3, and 3½ inches wide.
Stockinette, cotton, 2, 2½, 3, and 3½ inches wide.
Triangular, Esmarch's.

Battist, Milne's. A substitute for oiled silk, gutta-percha tissue, and jaconet. Can be boiled, and is spirit and grease proof.

Bed Sheets are of rubber, with funnel and eyelet holes for attaching.

Billroth's Cambric.—This material consists of cotton fabric treated by a special process. It takes the place of Gutta Percha Tissue and Oiled Silk, being capable of sterilisation without injury.

Bladder Irrigators consist of glass douche can with 5 foot rubber tubing, with stop-cock and rubber catheter; some have two-way metal pipe.

Bladder Syringes are of 4 or 5 ounce capacity, with glass or brass barrel. Herring's is of rubber with bayonet catch nozzle.

Bougies are solid elastic gum—

With bulbous end = à Boule, in sizes 1 to 16.
" silk web. " " 1 to 16.
Conical, pointed in shape " 1 to 12.
Cylindrical, not tapered at the end, various textures and materials—Sizes 1 to 16.

Œsophageal Bougies are bulbous, conical and cylindrical, of elastic gum.—Sizes 10 to 24.

Buttercloth.—As a dressing for applying ointments, liniments, &c. Width 36 inches.

Cataract Bandages of special form for bandaging the eyes after operation for cataract.

Catgut Ligatures are supplied raw and sulpho-chromic in hanks, Nos. 0000, the thinnest, up to No. 8. They are also supplied in bottles with Carbolic Acid solution 1 in 20, Carbolised Alcohol, Turpentine and various other antiseptics.

Mayo Robson sterilises in Xylol, which boils at 137° to 140° C., and washes the gut so treated in 5 per cent. Phenol in Spirit before operating.—B.M.J. ii./02, 974.

Watson Cheyne treats first with Liquid Phenol 24 hours, then keeps in 1 in 20 Phenol solution, and rinses in 1 per 2,000 Perchloride before use.—L. i./03, 349.

Gerrard uses the following process for sterilisation:—

1. Heating in turpentine oil to 250° F., and final immersion in sterilised liquid paraffin.
2. Heating in turpentine to 250° F., and then soaking for a week in 1 per cent. alcoholic solution of Mercuric Iodide, rinsing in 1 per 1,000 solution of Mercuric Iodide, and finally immersing in sterilised liquid paraffin. The liquid paraffin is colourless and remains clear and bright at all temperatures.

A further method is to heat the catgut gradually in Cumol to 70° C., then in the same substance to 170° C. for two hours. Finally to rinse in petroleum benzine.

Catheters.—Elastic gum, black and webbed, or silk web—

Bulbous, à Boule, sizes 1 to 16.

Coudé (bent at end).—Sizes 5 to 12.

Cyclindrical.—Sizes 1 to 15, with or without wire Stilettes, and sizes 5 to 12 with hollow or solid ends.

Conical (simply pointed, *i.e.*, tapered), with wire Stilette.—Sizes 1 to 12.

Jaques' India Rubber, with solid or hollow ends.—Sizes 3 to 18.

Belfast linen Catheters are also prepared.

Catheter Cases for pocket, with compartment for lubricant or antiseptic, *e.g.*, paraform.

Catheter Jars are made for hanging Catheters in an atmosphere rendered antiseptic with paraform.

Catheter Steriliser, Herring's, for sterilising elastic gum Catheters.

Web Catheters may be sterilised by boiling in nearly saturated solutions of Ammonium Sulphate or Sodium Chloride, with subsequent washing in sterile water.

Catheter Washers are made for affixing to water tap.

Catheters, Female, are of elastic gum, with Stilette, solid end, glass, straight or curved (Queen Charlotte's Hospital), metal, or soft rubber.

Caustic Points are supplied in glass tubes, and in wood and vulcanite cases.

Chalk's Bottles for Eye Solutions, with a rubber cap over the (hollow) stopper, in colourless and amber glass.

Charts, H. K. Lewis's M. & E. and 4 hour, Gould's M. & E. and 4 hour, Diagnosis, Coles', Maw's, Benton's Diet, and Maternity.

Celluloid is supplied in sheets $\frac{1}{50}$ inch thick, and being light, rigid and washable, is useful in surgery for splinting; it is rendered plastic by rolling up and macerating in hot spirit for a few minutes; it may then be wrapped round the limb with a layer of wool outside and quickly sets. N.B.—Very inflammable.

Cellulose Wadding.—A cheap absorbent dressing. Is prepared from wood fibre. 1 lb. rolls are supplied.

Cuppers are of rubber or glass, or glass with rubber ball.

Drainage Tubing is of various dimensions, and is supplied in 5 per cent. Phenol solution. It is convenient in glass tubes.

Dredgers, boxwood, glass, with metal top and vulcanite for Iodoform.

Ear Syringes. See Syringes, Ear.

Elastic Hosiery comprise stockings, socks, knee caps, leggings, thigh pieces, knee hose, thigh hose, anklets, elbow pieces, cuffs mitts. Measurements should be made from the limb, first thing in the morning.

Ether Bottles, capped, 1 to 40 ozs.

Eye Douche. Bowman's consists of rubber ball, with tubing and mount.

The Moorfields' Pattern, Douche Can with tubing.

The "Undine" is a glass flask with pointed spout.

Eye Dropper. A test tube with a spout a little more than half-way up the side of it. The Eye Drops may be warmed in the tube if desired, and, by inclining, the patient can administer the drops to his own eye. By plugging with a pledget of wool a solution may be kept sterile.

Eyelid Everter. A useful form has been arranged suitable for application of X rays in trachoma.—L. ii./03, 461.

Eye Pads are ready cut, round or oval, consisting of a layer of wool between two sheets of gauze.

Eye Rods have (i.) pointed (ii) flattened or (iii.) bulbou ends (Lang's) for ointments or solutions.

Eye Shades are—

1. Card covered with silk, flat or concave, suitable for either eye.
2. Celluloid, flesh colour, for right or left eye, or suitable for either eye.
3. Of pith, the "Symétrique."
4. Straw, plaited, in three sizes.
5. Double eye shades, card, pith and celluloid.

Felt, thick, coated with adhesive solution, in sheets 28 inches by 18 inches, and with soap plaster for bed sores.

Formalin Fumigators are made for fumigating rooms after infectious diseases, and to preserve goods from insect ravages.

Gauze (*vide* also "Sterilised Dressings") Alembroth, containing 1 per cent. of Sal Alembroth, is in 6 yard pieces, tinted with aniline blue. It is also supplied with cotton wool tissue of 2 per cent. strength in 1 lb., ½ lb., and ¼ lb. packages.
Boric, 20 per cent., in 6 yard pieces.
Carbolic, 5 per cent. in 6 yard pieces.
Chinosol, 3 per cent., 6 yard pieces.
Creolin, 10 per cent., 1, 5 and 20 yard rolls.
Eucalyptus, 5 per cent., in 6 yard pieces.
Iodoform, is supplied in 5, 10 and 20 per cent. strength in 6 yard pieces. Soothes the pain of burns.
Mercuric Iodide, 2 per cent., 6 yard pieces.
Mercuro-Zinc Cyanide, 3 per cent., is the most popular dressing for applying direct to wounds. It is supplied in 6 and 12 yard pieces, and with cotton wool tissue in 1 lb. packets. Is tinted pink with Rosaniline. Is damped before use with 1 in 20 Carbolic Acid solution.
Thymol, 10 per cent. strength, in 6 yard pieces.
Picric Acid, for burns.
White Absorbent, is supplied in 6 yard pieces. Tela Depurata P.G. is similar.
White Absorbent with cotton wool tissue, in 1 lb. rolls.
Xeroform, 10 per cent. strength, in 6 yard pieces.

All the above are also supplied with Cotton Wool in the form of **Gauze** and **Wool Tissue**.

Gauzes, Moist in glass jars, contains 1 and 5 yards (36 inches wide), of Boric Acid 10 per cent., Carbolic Acid 5 per cent., Perchloride 1 to 1,000 and 1 to 2,000, Iodoform 5 and 10 per cent., Mercuro-Zinc Cyanide 3 per cent. (*vide* also Sterilised Dressings, p. 636).

Gauze Protective, Blue, consists of coarse mesh gauze rendered waterproof and treated with Sal Alembroth as antiseptic.

Gauzes, Ribbon, as suggested by C. Stonham. These have a woven edge to prevent fraying and are particularly recommended for plugging cavities and wounds. The following are supplied in ¼ inch, ½ inch, 1 inch, 2 inch widths, in 12 yard lengths, in boxes and bottles:—

Alembroth, Aluminium Acetate (useful for foul wounds.—L. i. 03,936), Boric Acid, Carbolic Acid, Chinosol, Creolin, Iodoform, Mercuro-Zinc Cyanide, Non-Medicated, Mercuric Perchloride.

Gutta Percha Tissue in ¼ yard, ½ yard, 1 yard pieces, and as required.

Horsehair is supplied sterilised in Carbolic solution.

Handkerchiefs, Aseptic (Silky Fibre), are supplied in boxes of 50 and 100, medicated with Eucalyptus and Pine Oil, and Non-Medicated—intended for phthisical sufferers, in convenient cloth wallets, and for travelling.

Hypodermic Syringes are—1. Metal or vulcanite mounted (capacity 15 or 20 minims), with glass barrels. 2. All glass. 3. All metal, graduated in 20 minims. 4. Antitoxin, capable of thorough sterilisation, capacity 3, 5 and 10 cubic centimetres, in plated metal cases. The tightness of the piston is adjustable. 5. Syringes with bent, blunt needle having wide lumen. Suitable for injection of sterilised paraffin in plastic operations. A new Syringe for this purpose is described L. ii./03, 612. 6. Eucaine Syringes for use with Beta-Eucaine solution for infiltration.

Hypodermic Cups, of glass, are intended for holding the solution for injection whilst drawing up into a hypodermic syringe, or for dissolving a tablet with the aid of a glass rod as a pestle.

Ice or Hot Water Bags for the ear, eye, head (helmet shaped), abdomen, spine, throat (collar shape).

Impermeable Piline—⅓ the thickness of spongio piline of felt, and instead of the waterproof indiarubber backing of the latter, there is an antiseptic material, not affected by heat or strong spirit. Suitable for applying liniments in rheumatism, and where warmth is desired simultaneously.

Inhalers, Portable, and Poor Man's for inhalation of moist medicated air.

Inhalers.—Ozonic and Nasal Ozonic for inhalation of volatile oils and menthol.

Inhalers, Ammonium Chloride. — Godfrey's, Basdon's, and Maw's are varieties on the market. They are all the same in principle, which consists in combining the vapour of ammonia and hydrochloric acid.

Insufflators —Butlin's, for self use; Lucas's, rubber ball and vulcanite tube; Maw's, glass barrel and rubber ball; Kabierske's, glass chamber, rubber ball and vulcanite mount.

Some are arranged of metal which are capable of sterilisation.—B.M.J., i./03,88.

Jaconet, white and pink.

Jute, in 1 lb. rolls for rough absorbent purposes.

Ligatures (vide Catgut, Silkworm gut, Horsehair, &c.).

Lint (vide also Sterilised Dressings) is supplied in two forms — Finest and "Super Surgeon's" — in 1 lb. packages and 8, 4, and 2 oz. boxes.

Boric, contains half its weight of boric acid, and is coloured pink, in 1 lb. rolls, and 8, 4, and 2 oz. boxes.

Iodoform, 10 per cent.

Non-Absorbent is useful for local applications.—M.P.C ii./03,395.

Styptic consists of absorbent lint, treated with 1 per cent. Ferric Perchloride.

Macintosh or **Waterproof Sheeting,** 44 inches wide is supplied—

1. Double texture and double width.
2. Having rubber on both sides.

Moss (Sphagnum), the Turf Moss (*v. p.* 486). Sheets measure 24 inches by 15 inches.

Muslin, Nainsook, width 36 inches. Somewhat softer than buttercloth, is useful for ointments.

Nasal Douches or **Irrigators** are—

1. Of rubber tubing, with stop-cock for use as a *syphon*.
2. In the form of a *spray bottle* for spraying into the nostrils.
3. *Boat shape*, of glass, with aperture for covering with the finger, and thereby controlling the flow of liquid. This latter form is useful where a small quantity of solution is employed, as in a simple catarrh.

Woakes' pattern has a rubber nozzle, and is similar.

4. *Syringe form*, consisting of rubber bulb or glass tube with piston, with shaped vulcanite or rubber nasal plugs.

Oiled Calico consists of calico treated with boiled oil and thus rendered waterproof.

Oiled Silk is supplied (a) green, (b) in the non-adhesive (French) form of yellow colour, and (c) a further variety is brown in colour.

Oiled Silk Protective. This consists of oiled silk coated on both sides with copal varnish, and when dry, brushed over with Dextrin 1, Starch 2, Carbolic Lotion (1 in 20) 16.

Ointment Introducers (Rectal, Allingham's) are square or round in shape of vulcanite. Pearce Gould's has graduation marks on tube. Urethral Ointment Introducers are also supplied.

A further modification of Allingham's Introducer, consists in the piston being provided with a screw cap. The cap being free, the piston works up and down by pressure, when fixed the piston works only by screwing it round on the cap. A rubber tube is added.—L. ii./03,10.

Ophthalmic Bottle, Lang's, is intended for ophthalmic solutions and ointments. It has no ledges on which dust can accumulate. The cap of the bottle when removed rests upon three points so as to pick up the minimum of dust. A small rod or pipette stands inside. —B.M.J., 1./03,501.

Ovariotomy Aprons. Should be spread of lenticular shape, and the opening is preferred nearer one edge of the apron than the other, so that the free portion may be spread over the operator.

Pads (*vide* Sterilised Dressings, Swabs).

Pessaries are ball shape, butterfly, circular, oval, cradle, and ring form.

Piline, impermeable and spongio.

Plasters, spread :—

Adhesive, on unglazed calico, 16 inches wide, any length; also 6 inches wide, 6 yard rolls.
Adhesive, on union, 6 inches wide.
,, on dimity, 16 inches wide.
,, Tapes, holland and pliable, ¼, ½, 1, 1½, and 2 inches wide; length, 6 yards.
Belladonna, plain and porous, 7 inches wide, yard rolls.
,, on red felt, porous, 7 inches wide, yard rolls.
India Rubber, Adhesive, 7 inches wide, 1 yard and 5 yard rolls.
India Rubber Adhesive, Porous, 1 yard rolls.
,, ,, (Mead's) Tapes, ½, 1, 1½, 2, 2½ and 3 inch, in both 5 and 10 yard lengths.
Isinglass on Muslin, 8 inches wide, yard rolls. White, black, or flesh-coloured.
Isinglass on Muslin, 11 inches wide, 5 yard rolls. White, black or flesh-coloured.
Isinglass Tapes, ¼, ½ and 1 inch, 10 yard lengths.
Isinglass on Silk, 7 inches wide, flesh coloured, black, and white, yard rolls.
Isinglass on Gold Beater's Skin, 6 in. wide, 1 yard rolls,
Zinc Oxide, Tapes, ½ and 1 inch, 5 yard lengths.

Plaster Mulls.—These measure 1 metre by 20 centimetres and are medicated with a large variety of substances for various skin affections.

No.	Ingredients.	Per cent. of Medicaments in the Plaster mass.	Contents in Gm. per one fifth square metre.
2	Acid boric.	40	10
82	,, salicyl.	60	50
9	,, ,,	50	25
10	,, ,,	40	10
64	Acid. salicyl.	40	20
	Ext. cannab. ind.	10	5
78	Acid. salicylic	22	20
	Creosote	44	40
76	Ac. salicyl.	20	10
	Creosote	40	20
79	Ac. salicyl.	25	30
	Creosote	45	50
81	Acid. salicyl.	36	50
	Creosote	36	50
98	Acid. salicyl.	30	10
	Resorcin	30	10
5	Chrysarobin	35	10
6	,,	15	2
68	Ext. bellad.	35	10
15	Hydrarg.	55	20
83	Hyd. precip. alb.	45	10
16	Hydrarg.	45	20
	Acid. carbol.	16	7·5
88	Hydrarg.	30	20
	Acid. carbol.	15	10
	Hydrarg. perchlor.	3	2
	Zinci oxidum	15	10
17	Hydrarg.	35	20
	Zinci oxidum	35	20
66	Ichthyol	45	10
11	Iodoform	45	10
7	Pyrogallol	40	10
72	Resorcin	53	15
87	Resorcin	45	15
	Hyd. perchlor.	3	1
24	Zinc ox.	45	10
25	,,	55	20
71	Zinc ox.	35	10
	Ichthyol	17·5	5

Paraplasts, No. 255 (Hydrargyri 50 per cent., Acid Carbolic 7·5 per cent.), No. 259 (Zinci Oxidum 40 per cent.). A number of other formulæ are prepared.

Are impermeable caoutchouc coatings (one sided) on cotton of much closer texture than the plaster mulls, and are, therefore, firmer and tougher than the latter.

Plaster of Paris, for splints. Directions, *v. p.* 139.

Potassium Silicate Solution, or soluble glass, viscid, specially prepared for silicating bandages.

Reels, Glass, for winding sutures; may be sterilised in a test tube.

Respirator, a new, with filtering chamber.—L. ii./03,169.

Salve Mulls—

No.	Contents.	One-fifth sq metre contains	
		1 sided	2 sided
		Gm.	Gm.
15*	Acid boric	10	10
2	Emp. plumbi ... ... Acid. carbolic	5	10
17	Ichthyol	10	10
11	Zinc oxide	10	10
12	" "	10	20
	Mercuric oxide	5	5
18	Zinc oxide	10	10
	Ichthyol	2	2

A large number of similar preparations are made. These consist of stiff ointments spread on muslin.

Sanitary Towels. Hygienic, for menstruation. Are prepared of Sphagnum, the turf moss; are very absorptive, deodorant and antiputrescent. Hartmann's are of wood wool, a suitable material. Southall's, Nos. 0, 1, 2, 3, 4 and extra large, blue wrapper, and the "Mene" are of cotton fabric. Maw's are in two brands, ordinary and superfine.

Sealed Tubes. Glass tubes, with sealed tapered ends (the ends of which are snapped off when required), containing sterile solutions. Phenol liquid for producing 1 pint of 1 in 20 solution. Saline Gelatin solution for subcutaneous injection. Glucose solution for use in exhausting diseases, and as a preliminary to severe operations (*v. p.* 271). Saline solution, containing sufficient pure Sodium Chloride for producing 2 pints of normal saline on dilution.
Vide also "Sterules."

Silk Sutures are supplied on reels and in hanks, sizes 0, 1, 2, also sterilised in absolute Alcohol and Phenol Solution. Silcock sterilises by immersing in Olive Oil for 12 hours and then boiling in the same and keeping in Carbolised spirit.

Silkworm Gut, extra fine, fine, medium, and stout, in 10 and 14 inch lengths.

Soaps—

Biniodide, containing ½, 1 and 3 per cent. Mercuric Potassium Iodide, reliable antiseptic.
Ichthyol, 10 per cent. in skin affections.

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* Add 1,000 (*e.g.*, 1015, &c.) to these numbers if one-sided mulls required, or 2,000 if two-sided.

Soaps—*continued.*

Salicylic, 5 per cent.
Lanolin and Ichthyol.
Carbolic, Toilet and Medicinal, strength 5, 10, and 20 per cent.
Fel's Germicidal.
Price's Surgeon's.
" Pura."
Resinol.
Vinolia Medical.
Wright's Coal Tar.
Peruvian Balsam.
Sublimate, 1 per cent.
Sulphur precipitated, 10 per cent.

Soap Solution, Ethereal.—A detergent preparation for surgical use.

Soluble Glass. See Potassium Silicate.

"**Solubes**" are material for preparing antiseptic solutions for external and local use, *e.g.*, Biniodide, each making 1 pint of 1 in 1,000 solution. Perchloride, 1 in a tumbler = 1 in 4, 500; 1 in 1 pint = 1 in 1,000; 1 in 1 pint = 1 in 500, *vide also p.* 291. Others are made for producing lotions for spraying the throat and snuffing into the nostrils. For List, *vide* Index.

Spittoon, Phthisical, in white metal and (cheaper) in japanned tin. Also in blue glass with metal mounts. Antiseptic tablets are supplied for use with same.

Sponges, Carbolised, in wide-mouthed metal-capped bottles. These are used in abdominal surgery, and are in three sizes:—

(1) About 2 to 3 inches in diameter.
(2) About the size of palm of hand.
(3) Large flat, about 8 inches in diameter.

Many surgeons still prefer these to cotton swabs.—L. i./03,349.

"Zimocca" Sponges are similar, supplied in bottles of 1 dozen and cartons of ½ dozen.

Circular Gauze and **Wool** pads, about 3 inches in diameter. Also sterilised (*vide* Sterilised Dressings).

Spongio Piline.—Thick felt with waterproof india-rubber backing for applying warm moist dressings.

Sprays. For Cocaine, should have very fine aperture, the jet being preferably of metal. For other medicated solutions they may be of vulcanite or glass.

Sterilised Dressings are supplied in cartons. These dressings have been submitted to a temperature of 250° F. for 30 minutes at a pressure of 15 lbs. in a steam vacuum autoclave. Each parcel of dressing is wrapped by a patent method. As a further precaution there is a parchment wrapper and an air tight dust-proof carton. In this form are supplied:—

Gauze, plain, absorbent, 1, 2, and 6 yard cartons.
,, **Alembroth** and **Boric**, each 1 and 2 yards.
,, **Cyanide**, 1, 2, 6, and 12 yard cartons.

Lint, plain, absorbent, **Alembroth, Boric**, and **Cyanide**, each in 1 and 2 oz. cartons.

Wool, plain absorbent, 1, 2, and 8 oz. cartons.
,, **Alembroth, Boric**, and **Cyanide**, each in 1 and 2 oz. cartons.

Swabs, cartons contain: 12 small round pads suitable for eye-work; 6 larger round pads (about 2 inches in diameter); 12 gauze, 6 inches square; 12 wool and gauze tissue pads, 3 inches square; **tins** contain 10 gauze covered swabs, 4 inches square; also **tins** containing 10 swabs 6 inches square (*vide* also Triangular Swabs).

In addition, **Iodoform Gauze** (2 yards) and **Carbolised Wool,** 50, 100, and 250 Gm. are wrapped with strict aseptic precautions in similar cartons, but are not heated.

Combined cartons contain 1 ounce of plain absorbent wool, with ½ yard plain absorbent gauze sufficient for a minor dressing, and combined cartons containing Alembroth Gauze (6 yards) with wool and gauze tissue suitable for a major operation.

For **Dental Use** are prepared:—

Aseptic Dental Napkins to be used once and thrown away.

Cottonoid, an absorbent felted cotton in sheets 3½ inches by 12 inches.

Absorbent Dental Rolls. As a substitute for the napkin or rubber dam. These are useful for covering the mouths of the salivary ducts; a section may be placed on either side of a tooth, or the entire roll may be bent round the entire outside of the arch or under the tongue. No. 1 size, diameter $\frac{5}{16}$ inch; No. 2, $\frac{3}{8}$ inch; No. 3, ½ inch; No. 4, $\frac{5}{8}$ inch; in 1½ or 6 inch lengths.

Non-absorbent Dental Rolls.—To replace the rubber dam. Useful in crown and bridge work. May be used in connection with the saliva ejector.

Sterilised Absorbent Pledgets for wiping out cavities.

Aseptic Absorbent Points are prepared for drying pulp canals.

Sterilised Bibulous Paper, in sheets, 3 inches by 10 inches.

Carbonised Cotton for filling pulp canals, and for treatment of exposed pulps.

Sterilisers (for milk).—The Soxhlet and Aymard's Patent are in use.

Steriliser and Reels for Sutures, portable. — L. ii./03,611.

Stomach Tubes.—That known as Van Valsah's, with bevelled "Velvet Eyes," is considered one of the best. For passing the tube a special lubricant glycerin jelly is supplied in collapsubes, or a Glyco-Gelatin Pastil of Menthol $\frac{1}{12}$, and Cocaine $\frac{1}{20}$ is useful. (*Vide* Examination of Stomach Contents.)

Sutures (*vide* Catgut, &c.).

Syringes—

1. Vulcanite and glass with rubber nozzle, "Glycerin" Injection.
2. India-rubber ball with soft rubber nozzle in one piece (ear and nose).
3. Rubber ball with bent glass nozzle (ear and nose).
4. Ball with conical vulcanite nozzle (Injection, "Bottle").
5. Barrel shaped of glass or brass.
6. Enema, for rectal injection and vaginal douching.

Urethral, rubber ball, ½ ounce size, with bone pipe or elastic gum, short or long (Golding Bird's is a special form). Squire's is rubber, flattened in shape. See also Hypodermic Syringes.

Temperature Charts. *See* Charts.

Tela Depurata. *See* Gauze.

Tenax, carded oakum, 1 lb. packages.

Thermometers, Clinical, are made in large variety, recording instantaneously or in ½, 1, 2, or 3 minutes. Those with magnifying index are easily read, and are generally preferred with a Kew certificate. The "Hygienic" thermometer screws into an outer glass tube, upon which the markings are engraved; the thermometer itself without markings is more easily cleansed in infectious cases. The patient cannot read the temperature himself. Maw's 'Saefinuse' is similar in principle. The 'Repello' has a flattened bulb, and is quickly set by pressing same lightly.

Tillman's Dressing is Cellulose Wadding for absorbent purposes.

Tow Flax, ½-lb. rolls. **Tow Jute**, 1 lb. rolls.

Triangular Swabs are prepared having a pocket at one angle in which the finger, a probe or other instrument can be introduced. This facilitates the packing of a cavity or large wound during the process of operation. The swabs are sterilised in a steam vacuum steriliser, and are supplied in tins soldered down, containing respectively 10 and 20 swabs. The exact number is important, as by counting the swabs left over after an operation the surgeon can be certain of not having left any in the wound.—Jackson Clarke, M.P.C., Aug. 12, 1903.

Trusses, Femoral, Inguinal, Rectal, Scrotal, Umbilical. Some are manufactured having the pad adjustable both as regards length and angle.—B.M.J. i./03,972.

'Undine' Irrigator—An eye douche in the form of a glass flask with pointed spout.

Velvril.—A tough elastic cellulose product, in sheets for surgical purposes. Is made to adhere to the skin by means of velvril solution.—L. i./03,167. P.J. i./03,266.

Urethral Syringes. See Syringes, Urethral.

Vaccination Lancets, Pads, Wafers (Tegmine).

Wool, Absorbent, 1 lb. rolls; also in 1, 2, and 4 oz. boxes.

Prepared cotton (non-absorbent) in similar packets.

Both the above also in thin sheets measuring 20 by 14 inches.

Absorbent, Alembroth 2 per cent., 1 lb. rolls.

,, Alum 40 per cent.

,, Boric Acid (coloured pink), 1 lb. rolls.

,, ,, ,, has 50 per cent., 1 lb. rolls.

,, Camphor 33 per cent., 1 lb. rolls.

,, Carbolised 5 per cent., 1 lb. rolls.

,, Eucalyptus 5 per cent., 1 lb. rolls.

,, Hamamelis. T. H., 1881.

,, Iodised 6 per cent., 1 lb. rolls.

,, Iodoform 50 per cent., 1 lb. rolls.

,, ,, 10 per cent., 1 lb., ½ lb., and ¼ lb.

,, ,, 4 per cent., 1 lb. rolls.

,, Krameria T. H., 1881.

,, Menthol 10 per cent., 1 lb. rolls. Useful to plug the nose in nasal catarrh.

,, Mercuric Iodide ¼ per cent., 1 lb. rolls.

,, Mercuro-Zinc Cyanide 3 per cent., 1 lb., ½ lb. and ¼ lb. rolls.

,, Opium T. H., 1881, 1 lb. rolls.

,, Picric Acid, for burns, 1 lb., ½ lb. rolls.

,, Salicylic Acid 4 per cent., 1 lb., ½ lb., and ¼ lb. rolls.

,, ,, ,, 10 per cent., 1 lb. rolls.

,, Sheeps', absorbent, 1 lb. rolls.

,, Styptic (Ferric Perchloride 15 per cent.), 1 lb. rolls.

,, Sublimate, 2 per cent.

,, Tannic Acid T. H., 1881, 30 per cent., 1 lb. rolls.

,, Thymol, 5 per cent., 1 lb. rolls.

Capsicum. — Oleo Resin of Capsicum 1, Ether 30, Absorbent Cotton 19. Dissolve the Oleo Resin in the Ether, saturate the wool evenly with the solution and dry.

INTERNATIONAL ATOMIC WEIGHTS.

		O=16.	H=1.
Aluminium	Al	27·1	26·9
Antimony	Sb	120·2	119·3
Argon	A	39·9	39·6
Arsenic	As	75·0	74·4
Barium	Ba	137·4	136·4
Bismuth	Bi	208·5	206·9
Boron	B	11	10·9
Bromine	Br	79·96	79·36
Cadmium	Cd	112·4	111·6
Cæsium	Cs	132·9	131·9
Calcium	Ca	40·1	39·8
Carbon	C	12·00	11·91
Cerium	Ce	140·25	139·2
Chlorine	Cl	35·45	35·18
Chromium	Cr	52·1	51·7
Cobalt	Co	59·0	58·56
Columbium (Niobium)	Cb	94	93·3
Copper	Cu	63·6	63·1
Erbium	E	166	164·8
Fluorine	F	19	18·9
Gadolinium	Gd	156	155
Gallium	Ga	70	69·5
Germanium	Ge	72·5	71·9
Glucinum (Beryllium)	Gl	9·1	9·03
Gold	Au	197·2	195·7
Helium	He	4	4
Hydrogen	H	1·008	1·000
Indium	In	114	113·1
Iodine	I	126·85	125·90
Iridium	Ir	193·0	191·5
Iron	Fe	55·9	55·5
Krypton	Kr	81·8	81·2
Lanthanum	La	138·9	137·9
Lead	Pb	206·9	205·35
Lithium	Li	7·03	6·98
Magnesium	Mg	24·36	24·18
Manganese	Mn	55·0	54·6
Mercury	Hg	200·0	198·5
Molybdenum	Mo	96·0	95·3
Neodymium	Nd	143·6	142·5
Neon	Ne	20	19·9
Nickel	Ni	58·7	58·3
Nitrogen	N	14·04	13·93
Osmium	Os	191	189·6
Oxygen	O	16·00	15·88
Palladium	Pd	106·5	105·7
Phosphorus	P	31·0	30·77
Platinum	Pt	194·8	193·3
Potassium	K	39·15	38·86
Praseodymium	Pr	140·5	139·4
Radium	Ra	225	223·3
Rhodium	Rh	103·0	102·2
Rubidium	Rb	85·4	84·8
Ruthenium	Ru	101·7	100·9
Samarium	Sm	150	148·9
Scandium	Sc	44·1	43·8
Selenium	Se	79·2	78·6
Silicon	Si	28·4	28·2
Silver	Ag	107·93	107·12
Sodium	Na	23·05	22·88
Strontium	Sr	87·6	86·94
Sulphur	S	32·06	31·83
Tantalum	Ta	183	181·6
Tellurium	Te	127·6	126·6
Terbium	Tb	160	158·8
Thallium	Tl	204·1	202·6
Thorium	Th	232·5	230·8
Thulium	Tm	171	169·7
Tin	Sn	119·0	118·1
Titanium	Ti	48·1	47·7
Tungsten	W	184·0	182·6
Uranium	U	238·5	236·7
Vanadium	V	51·2	50·8
Xenon	X	128	127
Ytterbium	Yb	173·0	171·7
Yttrium	Yt	89·0	88·3
Zinc	Zn	65·4	64·9
Zirconium	Zr	90·6	89·9

Proceedings, Chemical Society, xix. 259.

NEUTRALISATION TABLE.

		Citric Acid. grains.	Tartaric Acid. grains.
Ammonium Carbonate	10 grains neutralise	12	12½
Potassium Bicarbonate		7	7½
Sodium Bicarbonate		8½	9

Lemon Juice contains from 30 to 40 grains Citric Acid per ounce. A good lemon yields on average an ounce of juice.

FREEZING MIXTURES.

or cooling and setting suppositories, bougies, &c.

The following is a list of some freezing mixtures best repared from commercial Crystalline Salts, and in a thick ooden vessel:—

		Temp. F. reached.
Ammonium Nitrate	1 part	+ 1·4
Water	1 ,,	
Sodium Nitrate	3 ,,	— 3
Dilute Nitric Acid... ...	2 ,,	
Ice	2 ,,	— 5
Sodium Chloride	1 ,,	
Ammonium Nitrate ...	1 ,,	— 7
Sodium Carbonate... ...	1 ,,	
Water	1 ,,	
Ice	24 ,,	— 18
Sodium Chloride	5 ,,	
Ammonium Nitrate ...	5 ,,	
Ice	3 ,,	— 23
Sulphuric Acid	2 ,,	
Ice	8 ,,	— 27
Hydrochloric Acid ...	5 ,,	
Ice	3 ,,	— 46
Dilute Nitric Acid... ...	2 ,,	
Sodium Phosphate... ...	3 ,,	— 50
Ammonium Nitrate ...	2 ,,	
Dilute Mixed Acids ...	4 ,,	
Ice	8 ,,	— 91
Dilute Sulphuric Acid ...	10 ,,	

ERCENTAGE AND GRAINS PER FLUID OUNCE EQUIVALENTS.

ercentage.	Grains per fluid ounce.	Percentage.	Grains per fluid ounce.
10·0 ...	43·75	1·9 ...	8·3
9·5 ...	41·56	1·8 ...	7·9
9·0 ...	39·4	1·7 ...	7·45
8·5 ...	37·2	1·6 ...	7·0
8·0 ...	35·0	1·5 ...	6·55
7·5 ...	32·8	1·4 ...	6·1
7·0 ...	30·6	1·3 ...	5·7
6·5 ...	28·45	1·2 ...	5·25
6·0 ...	26·25	1·1 ...	4·8
5·5 ...	24·05	1·0 ...	4·4
5·0 ...	21·9	·9 ...	3·95
4·5 ...	19·7	·8 ...	3·5
4·0 ...	17·5	·7 ...	3·05
3·5 ...	15·3	·6 ...	2·6
3·0 ...	13·1	·5 ...	2·2
2·5 ...	10·95	·4 ...	1·75
2·0 ...	8·75		

Approximate Melting Points and Consistence of some Fats and Waxes suitable for Suppositories, Pastes, Creams and Ointments.

	°C.	°F.	Appearance and Consistence to Touch. Atmospheric Temperature, 11° C.
Oleum Theobromatis	31-32	87·8–89·6	Yellowish white, hard, brittle, and melts with ease.
Sevum Præparatum Oleum Theobromatis } partes æq.	39	102·2	Rather hard and brittle, but melts with ease.
Paraffinum Molle Oleum Theobromatis } partes æq.	33-34	91·4-93·2	Stiff paste. Easily softened with the fingers. Suitable for thick creams.
Paraffinum Molle	35-39	95-102·2	
Unguentum Cetacei	36	96·8	White, soft base.
Adeps	38	100·4	Soft, white, unctuous.
Japan Wax	50	122	Hard, tough, and tenacious, tallowy. Obtained from *Rhus* species.
Adeps Lanæ	40-44	104-111·2	Yellowish, stiff, tenacious, unctuous.
Oleum Theobromatis Cetaceum } partes æq.	39-40	102·2-104	Hard. Melts easily between the fingers. Not so brittle as Oleum Theobromatis.
Sevum Præparatum	47	116·6	Soft and unctuous.
Cetaceum	46-50	114·8-122	Crystalline, scaly and slippery.
Unguentum Paraffini	47	116·6	Stiff unguent.
Ceresin Stearin } partes æq.	52	125·6	Very hard white mass.
Cera Alba 1 Oleum Theobromatis 6	51-52	123·8-125·6	Hard glossy mass. Easily melts between the fingers.
Japan Wax Hard Paraffin } partes æq.	48-51	118·4-123·8	Hard, white and brittle.
Ceresin	52-53	125·6-127·4	Hard, like good paraffin.
Stearin	53-54	127·4-129·2	White, hard, crumbling substance.

	°C.	°F.	Appearance and Consistence to Touch. Atmospheric Temperature 11° C.
Parafinum Durum	54-57	129·2-134·6	Crystalline, hard and unctuous (slightly greasy).
Unguentum Resinæ	54	129·2	
Adeps 3 Cera Alba 1	59	138·2	Stiff white pomade.
Adeps Cera Alba } partes æq.	58	136·4	Very hard, white mass.
Cetaceum Cera Alba } partes æq.	58-59	136·4-138·2	Hard as last, but not so white in appearance.
Cera Alba	62-64	143·6-147·2	White, hard, tenacious.
Carnauba Wax	85	185	Hard, yellowish, from leaf buds of *Copernicus cerifera.*
Carnauba Wax 1 Oleum Amygdalæ 4	77-78	170·6-172·4	Stiff mass, melting easily.
Carnauba Wax 1 Oleum Amygdalæ 3	78-79	172·4-174·2	Stiff ointment of brownish colour.
Cera Alba Oleum Amygdalæ } partes æq.	60-61	140-141·8	Hard and wax-like
Cera Alba 1 Oleum Amygdalæ 5	54	129·2	Stiff ointment.
Cera Alba 1 Oleum Amygdalæ 9	52-53	125·6-127·4	Stiff ointment base.
Cera Alba 1 Oleum Amygdalæ 19	48-49	118·4-120·2	Very soft creams.
Cera Alba 1 Oleum Amygdalæ 39	43	109·4	

THERMOMETRIC EQUIVALENTS.

For temperatures below the freezing point of water :—

C.	F.	C.	F.	C.	F.	C.	F.	C.	F.
—	—	—	—	—	—	—	+	—	+
°	°	°	°	°	°	°	°	°	°
40	40·0	31	23·8	22	7·6	16	3·2	7	19·4
39	38·2	30	22·0	21	5·8	15	5·0	6	21·2
38	36·4	29	20·2	20	4·0	14	6·8	5	23·0
37	34·6	28	18·4	19	2·2	13	8·6	4	24·8
36	32·8	27	16·6	18	0·4	12	10·4	3	26·6
35	31·0	26	14·8	17·778	0·0	11	12·2	2	28·4
34	29·2	25	13·0	—	+	10	14·0	1	30·2
33	27·4	24	11·2	°	°	9	15·8	0	32·0
32	25·6	23	9·4	17	1·4	8	17·6		

For temperatures above the freezing point of water :—

C.	F.	C.	F.	C.	F.	C.	F.
+	+	+	+	+	+	+	+
°	°	°	°	°	°	°	°
1	33·8	35	95·0	69	156·2	103	217·4
2	35·6	36	96·8	70	158·0	104	219·2
3	37·4	37	98·6	71	159·8	105	221·0
4	39·2	38	100·4	72	161·6	106	222·8
5	41·0	39	102.2	73	163·4	107	224·6
6	42·8	40	104·0	74	165·2	108	226·4
7	44·6	41	105·8	75	167·0	109	228·2
8	46·4	42	107·6	76	168·8	110	230·0
9	48·2	43	109·4	77	170·6	111	231·8
10	50·0	44	111·2	78	172·4	112	233·6
11	51·8	45	113·0	79	174·2	113	235·4
12	53·6	46	114·8	80	176·0	114	237·2
13	55·4	47	116·6	81	177·8	115	239·0
14	57·2	48	118·4	82	179·6	116	240·8
15	59·0	49	120·2	83	181·4	117	242·6
16	60·8	50	122·0	84	183·2	118	244·4
17	62·6	51	123·8	85	185·0	119	246·2
18	64·4	52	125·6	86	186·8	120	248·0
19	66·2	53	127·4	87	188·6	121	249·8
20	68·0	54	129·2	88	190·4	122	251·6
21	69·8	55	131·0	89	192·2	123	253·4
22	71·6	56	132·8	90	194·0	124	255·2
23	73·4	57	134·6	91	195·8	125	257·0
24	75·2	58	136·4	92	197·6	126	258·8
25	77·0	59	138·2	93	199·4	127	260·6
26	78·8	60	140·0	94	201·2	128	262·4
27	80·6	61	141·8	95	203·0	129	264·2
28	82·4	62	143·6	96	204·8	130	266·0
29	84·2	63	145·4	97	206·6	131	267·8
30	86·0	64	147·2	98	208·4	132	269·6
31	87·8	65	149·0	99	210·2	133	271·4
32	89·6	66	150·8	100	212·0	134	273·2
33	91·4	67	152·6	101	213·8	135	275·0
34	93·2	68	154·4	102	215·6	136	276·8

Thermometric Equivalents—*continued.*

C.	F.	C.	F.	C.	F.	C.	F.
+	+	+	+	+	+	+	+
°	°	°	°	°	°	°	°
137	278·6	178	252·4	219	426·2	260	500·0
138	280·4	179	354·2	220	428·0	261	501·8
139	282·2	180	356·0	221	429·8	262	503·6
140	284·0	181	357·8	222	431·6	263	505·4
141	285·8	182	359·6	223	433·4	264	507·2
142	287·6	183	361·4	224	435·2	265	509·0
143	289·4	184	363·2	225	437·0	266	510·8
144	291·2	185	365·0	226	438·8	267	512·6
145	293·0	186	366·8	227	440·6	268	514·4
146	294·8	187	368·6	228	442·4	269	516·2
147	296·6	188	370·4	229	444·2	270	518·0
148	298·4	189	372·2	230	446·0	271	519·8
149	300·2	190	374·0	231	447·8	272	521·6
150	302·0	191	375·8	232	449·6	273	523·4
151	303·8	192	377·6	233	451·4	274	525·2
152	305·6	193	379·4	234	453·2	275	527·0
153	307·4	194	381·2	235	455·0	276	528·8
154	309·2	195	383·0	236	456·8	277	530·6
155	311·0	196	384·8	237	458·6	278	532·4
156	312·8	197	386·6	238	460·4	279	534·2
157	314·6	198	388·4	239	462·2	280	536·0
158	316·4	199	390·2	240	464·0	281	537·8
159	318·2	200	392·0	241	465·8	282	539·6
160	320·0	201	393·8	242	467·6	283	541·4
161	321·8	202	395·6	243	469·4	284	543·2
162	323·6	203	397·4	244	471·2	285	545·0
163	325·4	204	399·2	245	473·0	286	546·8
164	327·2	205	401·0	246	474·8	287	548·6
165	329·0	206	402·8	247	476·6	288	550·4
166	330·8	207	404·6	248	478·4	289	552·2
167	332·6	208	406·4	249	480·2	290	554·0
168	334·4	209	408·2	250	482·0	291	555·8
169	336·2	210	410·0	251	483·8	292	557·6
170	338·0	211	411·8	252	485·6	293	559·4
171	339·8	212	413·6	253	487·4	294	561·2
172	341·6	213	415·4	254	489·2	295	563·0
173	343·4	214	417·2	255	491·0	296	564·8
174	345·2	215	419·0	256	492·8	297	566·6
175	347·0	216	420·8	257	494·6	298	568·4
176	348·8	217	422·6	258	496·4	299	570·2
177	350·6	218	424·4	259	498·2	300	572·0

The Reaumur scale (with zero at freezing point of water nd the boiling point of water being 80°) is now little used.

To convert a temperature in Centigrade into Fahrenheit nultiply by $\frac{9}{5}$ and add 32.

Conversely to transpose Fahrenheit into Centigrade subract 32 and multiply by $\frac{5}{9}$.

To convert Centigrade into Reaumur multiply by $\frac{4}{5}$.

To convert Reaumur into Centigrade multiply by $\frac{5}{4}$.

To convert Fahrenheit into Reaumur subtract 32 and aultiply by $\frac{4}{9}$.

To convert Reaumur into Fahrenheit multiply by $\frac{9}{4}$ and dd 32

INDEX

AND

POSOLOGICAL TABLE.

THIS index supplies the name and adult dose of every drug and preparation described in the foregoing pages (if used internally). The doses are based on personal experience, or are culled from the best authorities.

Official names are printed in italics. To render the index comprehensive, many preparations in general use, not elsewhere mentioned, are included, with appropriate doses. Lists of Formulæ for **Antrophores, Aurinaria, Bougies, Capsules, 'Collapsubes,' Effervescent Preparations, Hypodermic Injections and Tablets, Lozenges (Trochisci), Ophthalmic Discs, Pessaries, Pills, 'Solubes,' 'Sterules,' Suppositories, Tabellæ (Chocolate), Tablets (Compressed) and 'Vescettes'** are supplied.

NOTE.—The List of Surgical Dressings and Apparatus should be consulted for articles of that nature—they are not duplicated in this general index.

For all **Acids** look under the word **Acid**, for **Salts** *vide* **Latin name** of the **base**.

For **Capsules**, both gelatin and glass, *vide* **Capsules**.

For **Pastilli Glyco-gelatin** *v.p.* 275.

For **Effervescent Preparations**, see list under the word **Effervescent**.

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,, *Aceticum Dilutum*, 4·27 per cent. Acetic Acid	½ to 2 dr.	
,, *Aceticum Glaciale*, 99 per cent. Acetic Acid	2 to 5 m.	
,, Aconitic		47
,, Agaricum, Agaricinicum	1-6 to ½ gr.	527
,, Alginicum		527
,, Alpha-oxy-naphthoic	3 gr.	359
,, Arsenicum	1-60 to 1-12 gr.	97
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,, *Benzoicum*	5 to 15 gr.	1
,, Beta-phenyl-propionic		4
,, *Boricum, syn.* Boracic Acid	5 to 15 gr.	4
,, Boro-Salicylicum		6
,, Butyric		21
,, Cacodylicum	average ¾ gr.	98
,, Camphoricum	10 to 20 gr.	144
,, Carbazoticum	¼ to 2 gr.	28
,, *Carbolicum*	1 to 3 gr.	9
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,, *Chromicum* (as test, 597)		18
,, Chrysophanicum	1-6 to ½ gr. or more.	169
,, Cinnamicum		3
,, *Citricum*	5 to 20 gr.	
(10 neutralise 14½ of Pot. Bicarb. or 12 of Sodii Bicarb.)		
,, Cresylicum		11
,, Cubebicum	up to 15 gr.	232
,, Di-acetic, test for		593
,, Di-bromo-gallicum	5 to 15 gr.	17
,, Di-chloraceticum		18
,, Di-oxyphenylaceticum		606
Filicicum	6 to 15 gr.	266
,, Fluoricum		20
,, *Gallicum*	5 to 15 gr.	
,, Glycerophosphoricum	5 to 10 m.	25
,, Gynocardicum	½ to 3 gr.	376
,, Glycuronic		603
,, Hippuricum		3
,, Hydriodicum		323
,, Hydrobromicum Concentratum		19
,, ,, *Dilutum*	15 to 60 m.	19
,, *Hydrochloricum*, 32 per cent. HCl.	2 to 6 m.	
,, ,, Arsenic, free		94
,, *Hydrochloricum Dilutum*, 10·6 %	5 to 20 m.	
,, Hydrocinammicum		4
, *Hydrocyanicum Dilutum*, 2 per cent., *Off.* and C.U.D.,	2 to 6 m.	
,, Hydrocyanicum (Scheele) B.P.C.	1 to 3 m.	
,, Hydrofluoricum Dilutum	5 to 20 m.	20
,, ,, Purum		20
,, Hypophosphorosum	2 to 5 m.	406
,, Iodicum	1½ to 3 gr.	323
,, Ipecacuanhic		325
,, Kinicum	4 to 8 gr.	435
,, *Lacticum*, 75 per cent.	5 to 20 m.	21
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,, *Nitricum*, 70 per cent.	1 to 4 m.	23
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,, Oxynaphthoicum *a*-	3 gr.	359
,, Phenicum	1 to 3 gr.	9
,, Phenol-sulphonic		15
,, Phenyl-propionic		3
,, *Phosphoricum Concentratum*, 66·3 per cent.	1 to 4 m.	25
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,, ,, Oxydatum		30
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,, Phosphoratus	1 to 10 m.	402
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,, Hepatic	2 to 5 gr.	70
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,, Bicarbonas	3 to 10 gr.	76
,, *Bromidum*	5 to 30 gr.	76
,, *Carbonas*	3 to 10 gr.	
,, *Chloridum*	5 to 20 gr.	76
,, Cyanas		514
,, Fluoridum	(max. 4 gr.) 1-24 to 1-8 gr.	20
,, Hypophosphis	1 to 6 gr.	406
,, Iodidum	3 to 20 gr.	77
,, Molybdas		44
,, Nitras		77
,, Persulphas		482
,, *Phosphas*	5 to 20 gr.	
,, Picras	1-8 to 1½ gr.	29
,, Salicylas	5 to 30 gr.	35
,, Sulpho-ichthyolas	10 to 30 gr. daily	307
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'Ammonium-phenyl-acetamide'	5 to 20 (?) gr.	181
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nthrapurpurin Acetate	7½ to 15 gr.	155
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Antifebrin, syn. Acetanilidum	1 to 3 gr.	180
Antimellin		333
Antimonii Chloridum		83
,, *Oxidum*	1 to 2 gr.	
Antimonium Sulphuratum	1 to 2 gr.	
,, *Tartaratum*	Diaphoretic & Expectorant 1-24 to 1-8 gr. Depressent, 1-6 to ½ gr. Emetic ...... 1 to 2 gr.	
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,, Caffeino-citricum	8 to 15 gr.	136
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,, Monobromide	5 to 20 gr.	192
,, Salicylate	15 to 30 gr.	193
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Argenti Lactas, 0·5 to 2 per cent.
Argenti Nitras, 0·5 to 3 per cent.
Chinosol, 5 per cent.
Cocaine Hydrochloride, 5 per cent.

Name.	Dose.	Page
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Eucaine, 5 per cent.		
Hamamelis Extract, 10 per cent.		
Ichthyol, 20 per cent.		
Iodoform, 5, 10 and 20 per cent.		
Protargol, 0·5, 1, 1½, and 2 per cent.		
Resorcin and Tannin, āā 5 per cent.		
Thallin, 2½, 5 and 10 per cent.		
Zinc Sulphate, 0·5 per cent.		
Anusol		121
Apiol	3 to 6 m.	83
,, Crystallised		84
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Apium Petroselinum		83
Apocodeinæ Hydrochloridum	1-10 to 1 gr.	86
Apocynum		84
Apomorphinæ Hydrochloridum	1-16 to ¼ gr. by mouth 1-25 to 1-6 hypoderm.	85
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,, *Anethi*	½ to 2 oz.	xxiv
,, *Anisi*	½ to 1 oz.	xxiv
,, *Aurantii Floris*	½ to 2 dr.	111
,, Bromoformi	1 to 4 oz.	129
,, *Camphoræ*	½ to 2 oz.	143
,, *Carui*	½ to 2 oz.	xxiv
,, *Chloroformi*	½ to 2 oz.	168
,, *Cinnamomi*	2 dr. to 1 oz.	xxiv
,, Cresolica		180
,, *Fœniculi*	½ to 2 oz	xxiv
,, Hydrogenii Dioxidi	½ to 2 dr.	298
,, Kresolica		11
,, *Laurocerasi*, 0·1 per cent. Hydrocyanic Acid	½ to 2 dr.	79
,, Mellis		62
,, *Menthæ Piperitæ*	½ to 2 oz.	xxiv
,, *Menthæ Viridis*	½ to 2 oz.	xxiv
,, Phenolata, 2 per cent.		12
,, Picis	5 to 10 oz.	423
,, *Pimentæ*	½ to 2 oz.	xxiv
,, *Rosæ*	1 to 2 oz.	381
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ueous Tinctures		508
aroba		171
bor Vitæ		538

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Arctostaphylos Uva Ursi		528
Areca	1 to 4 dr.	528
Arecoline and Hydrobromide		528
Arenaria Rubra		529
Argentamine		90
Argentic Hair Dye		89
,, Quinaseptol		90
Argenti Acetas		87
,, Citras (Itrol)		87
,, Fluoridum (Tachiol)		87
,, Lactas (Actol)		88
,, *Nitras*	¼ to ½ gr.	88
,, ,, *Induratus*		89
,, ,, *Mitigatus*		89
,, *Oxidum*	½ to 2 gr.	89
,, Thio-hydrocarburosulphonas		91
Argentol		90
Argentum		87
,, Colloidale	3-8 to 2 gr.	91
,, Credé...	3-8 to 2 gr.	91
Argonin		90
Argyrol		90
Ari Succus...	1 dr.	538
Aristochin	8 to 15 gr.	443
Aristol		314
Aristolochia		xix, 530
Aristoquinine	8 to 15 gr.	443
Arnicæ Flores		xix
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Arrhénal Treatment	2-5 to 3 gr.	101
Arsen-Hæmol	1½ gr.	532
Arsenic, White	1-60 to 1-15 gr.	92
,, Antidote to ...	½-oz. every 5 or 10 minutes	94
,, Tests for		94
Arsenical Cigarettes		98
,, Paste		96
,, Powder		96
Arsenii Bromidum	1-60 to 1-12 gr.	95
,, *Iodidum*	1-20 to 1-5 gr.	96
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Arsenyl	½ gr.	99
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,, Incarnata		529
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,, Wax		34
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Aspidospermine and Sulphate		433
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Atoxyl	¾ to 3 gr.	102
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Atropina	1-200 to 1-100 or 1-16 gr.	102
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,, Salicylas	1-120 to 1-40 or 1-16 gr.	104
,, *Sulphas*	1-200 to 1-100 or 1-16 gr.	104
,, Valerianas	1-120 to 1-40 or 1-16 gr.	104
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Auri Bromidum	1-60 to 1-5 gr.	112
,, Chloridum	1-6 to 1-16 gr.	113
,, et Sodii Chloridum	1-30 to ½ gr.	113
Aurinaria		112
Aurinarium Acidi Borici	1 gr.	
,, ,, Carbolici	1-10 gr.	
,, Chinosol	½ gr.	
,, Cocainæ Hydrochloridi... ...	1-10, 1-5 gr.	203
,, Iodoform	½ gr.	
,, Morphinæ Hydrochloridi, 1-10, 1-5 gr. and with Cocaine 1-10 gr.		
,, Morphine 1-10, Cocaine 1-10, and Boric Acid 1 gr.		
,, ,, 1-10, Ext. Bellad. 1-5		
,, Opii	1-5, ½ gr.	
,, Plumbi Acetatis, ½ gr. and with Ac. Boric 1 gr.		

NAME.	DOSE.	PAGE.
Aurinarium Plumbi Acetatis et Opii	1·5 gr.	
,, Zinci Sulphatis	½ gr.	
,, ,, Sulphocarbolatis	½ gr.	
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Balneum, an ordinary bath = about 25 gallons		
,, Picis Carbonis		178
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,, Canadense		537
,, Copaibæ		382
,, *Peruvianum*	5 to 15 m.	
,, *Tolutanum*	5 to 15 gr.	
,, Vitæ Hoffmanni	1 to 4 dr.	505
Bapkins of Wood Wool		419
Baptisia Tinctoria		529
Baptisin	1 to 5 gr.	529
Barbaloin	½ to 2 gr.	73
Barfoed's Glucose Test		603
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,, Chloratum, P.G. (Chloride)	½ to 1½ gr.	114
,, Sulphide	½ to 1 gr.	114
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,, Platino-cyanide Screens		444
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Beberine Hydrochloride and Sulphate	1 to 10 gr.	529
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,, beta-naphtholas		10
,, Biondi Stain		601
,, *Carbonas*	5 to 20 gr.	120
,, Citras	2 to 5 gr.	120
,, et Ammonii Citras	2 to 5 gr.	120
,, Dithio-salicylas		123
,, Iodo-resorcin-sulphonas		121
,, Nitras Cryst.	5 to 10 gr.	121
,, Oxybromidum	5 to 7 gr.	122
,, *Oxidum*	5 to 20 gr.	121
,, Oxycarbonas	5 to 20 gr.	120
,, Oxychloridum	5 to 20 gr.	122
,, Oxyiodidum	5 to 10 gr.	122
,, Oxyiodogallas		121
,, *Oxysalicylas*	5 to 20 gr.	123
,, 'Phosphas'	3 to 8 gr.	123
,, Pyrogallas	2 to 8 gr.	119, 126
,, *Salicylas*	5 to 20 gr.	123
,, ,, et Cerii Salicylas	5 to 20 gr.	123
,, Subgallas		125
,, *Subnitras*	5 to 20 gr.	124
,, Sulphocarbolas	4 to 8 gr.	123
,, Tannas	10 to 30 gr.	125
Bismutose	15 gr. or more	125
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,, *Catechu*	5 to 15 gr.	xix
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,, Staining		600
,, Testing		597
Blue Gum Tree		246
,, Methylene	1 to 4 gr.	187
,, Unction		284
Boas's Test Breakfast		615
Bogbean		534
Boldoa Fragrans, Boldin		529
Boletus Laricis	10 to 30 gr.	527
Bolus Alba		334
Bone, Decalcified		566
,, Marrow Extract, Red		565
,, Glycerin, Extract of	½ to 1 dr.	565
Boracite		9
Borax	5 to 20 gr.	
,, Carmine		601
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,, ,, Zinc and Starch Powder		335
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,, Urethral, Gelatin, 2½ and 4 inches (dip in warm water)		126
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Opium, 1 gr. and 2 gr.		
Silver Nitrate, ¼ gr.		
Stypticin, ½ gr. to ⅔ gr.		
Tannic Acid, 1 gr.		
Thalline, 1 gr. and 2 gr.		196
Zinc Acetate, ½ gr. and 1 gr.		
Zinc Chloride, ¼ gr. Belladonna, Alc. Ext. 1 gr.		
Zinc Sulphate, ½ gr. and 1 gr.		
Zinc Sulphate, ½ gr. Belladonna, Alc. Ext., 1 gr.		
Zinc Sulphate, 1 gr. Belladonna, Alc. Ext., 1 gr.		
Zinc Sulphate, 1 gr. Ext. Opium, 1 gr.		
Zinc Sulphocarbolate, ½ gr.		

Name.	Dose.	Page
Bougies, Urethral, with Cacao Butter (dip in Catheter Oil)		126
Belladonna, Ext. Root, ¼ gr.		
Betol		361
Bismuth Oxychloride, 5 and 10 gr.		
„ „ with Lead Acetate, 1 gr.		
Cocaina	½ gr.	200
Cotarnine	½ gr.	363
Eucalyptus Oil, 10 m.		
Iodoform, 3 and 5 gr.		
Iodoform, 5 grs. Eucalyptus Oil, 10 m.		312
Lead Acetate, ½ gr., ¾ gr., and 1 gr.		
Opium, 1 and 2 gr.		
Silver Nitrate, ¼ gr.		
Stypticin, for Hæmorrhage, ½ gr.		363
Tannic Acid, 1 gr.		
Zinc Chloride, ¼ gr. and ½ gr.		
„ Sulphate, ½ gr. and 1 gr.		
Bovinine		251
Bovril		251
„ Beef Jelly		251
„ Invalid		251
„ Lozenges		251
Bow's Liniment		385
Brain Extract		566
Branalcane		6
Bromal		127
Bromalbacid	15 to 30 gr.	127
Bromal Hydrate	2 to 5 gr.	127
Bromalin, Bromethylformine	10 to 30 gr.	127
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Bromine, Capsules of		126
Brominol, Brominoleum (33 %)	10 to 60 gr.	127
„ Mixture		128
Bromipin		127
Bromocoll	8 gr or considerably more	128
„ Resorbin		129
Bromoform	½ to 2 m.	129
Bromo-Hæmol	30 gr.	532
Bromol (Tribromphenol)	½ to 2 gr.	16
Bromopyrin	5 to 20 gr.	192
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Brucine	1-12 to ½ gr.	529
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Buginaria.—Nasal Bougies, Elastic Gelatin, 3$\frac{3}{16}$ in. long.		126
Buginarium Acidi Carbolici	½ gr.	126
,, Cocainæ Hydrochloridi	1-6 gr.	126, 203
,, Cupri Sulphatis	1-10 gr. and 1-6 gr.	126
,, Iodoformi	1-6 gr. and ½ gr.	310
,, Zinci Sulphatis	1-10 gr.	126
,, { Zinci Sulphatis 1-10 gr. Aluminis 1-10 gr. }		
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Burney Yeo's Chlorine Mixture	1 oz.	441
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,, *Semina*		xix
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Bynin	1 to 4 dr.	344
,, Amara	2 to 4 dr.	344
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,, of Betol	5 gr. with Bismuth Salicyl. 5 gr.	362
,, of Boric Acid	10 gr.	5
,, of Methylene Blue	1 to 4 gr.	188
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Cacodyle		98
,, "New"		101
Cacodyliacol	½ to 2 gr.	99
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,, Citrata	2 to 10 gr.	134
Caffeinæ Ammonio-Citras	1 to 10 gr.	135
,, *Citras*	2 to 10 gr.	134
,, ,, *Effervescens*	1 to 2 dr.	134
,, Citratis Tabellæ		135
,, Di-iodo-hydriodidum	2 to 4 gr.	136
,, Ethylene diamine		136
,, Hydriodum	½ to 5 gr.	135
,, Hydrobromidum	½ to 5 gr. or more.	135
,, Hydrochloridum	½ to 5 gr. or more.	135
,, Sodio-Benzoate	maxim. 45 gr. per diem	135
,, Sodio-Salicylas	1 to 4 gr.	135
,, Tri-Bromidum	¼ to 1 gr.	136
,, Tri-Iodidum	2 to 4 gr.	136
,, Valerianas	½ to 3 gr.	136

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,, *Carbonas Præcipitatus*	10 to 60 gr.	
,, *Chloridum*	5 to 15 gr.	137
,, Glycero-arsenas	1-6 gr.	28
,, Glycerophosphas	3 to 10 gr.	25
,, Hippuras	5 to 20 gr.	3
,, *Hypophosphis*	3 to 10 gr.	406, 407
,, Iodatum	3 to 4 gr.	138
,, Lactas	1 to 5 gr.	22
,, Lactophosphas (in syrup		22
,, Permanganas		347
,, Peroxidum	3 to 9 gr.	139
,, *Phosphas*	5 to 15 gr.	
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Cryogenin *v.* Kryogenine		
Crystallised Aconitine	1-600 to 1-250 gr.	47
ubeb Cigarettes		232
ubeba	30 to 60 gr.	231
ubebic Acid	15 gr.	232
ubebin		232
ubes of Sodium Peroxide		300
uca	30 to 120 gr.	196
ucumber Ointment		232
ucumis		232
ucurbitæ Semina Præparata	3 to 4 oz.	xx
udbear		27
ulture Media		624
„ „ Standardisation of		624
umol		628
uprea Bark		173
upreinæ Sulphas	1 to 5 gr.	173
upri Acetas	1-12 to ½ gr.	
„ Arsenis	1-100 to 1-25 gr.	97
„ -Aseptol, Cupri sulphocarbolas		16
„ Oleas		372
„ *Sulphas*	¼ to 2 gr.; emetic 5 to 10 gr.	
„ Sulphocarbolas		16
upric Test Pellets		603
uprol		157
uprocitrol, 10 per cent. Eye Ointment		

NAME.	DOSE.	PAG
Cuprum Aluminatum	...	
Curara	1-20 to ½ gr.	2
Curarina	(?) 1-400 to 1-40 gr.	2
Curdling Ferment	...	3
Cusso	¼ to ½ oz.	2
Cyanide Paste	...	2
Cyllin, Medical	1 to 5 gr.	1
,, Surgical Soap	...	1
Cypridol Capsules	1 or 2	2
Cypripedin	1 to 3 gr.	5
Cystamin	5 to 10 gr. once a day	
Cyticine	...	5
Cytisus Scoparius	...	4
Daisy Powders	...	1
Damiana	...	2
Daturæ Folia	...	xx, 2
,, *Semina*	...	
Daturina	1-120 to 1-16 gr.	2
Daturinæ Sulphas	1-120 to 1-16 gr.	2
Decalcified Bone	...	5
Decoctum Acaciæ Corticis	½ to 2 oz.	xv
Decoctum Agropyri	½ to 2 oz.	xv
,, *Aloes Compositum*	½ to 2 oz.	
,, Cetrariæ, B.P. 1885	*ad lib.*	
,, Cinchonæ, B.P. 1885	1 to 2 oz.	1
,, *Cissampeli*	½ to 2 oz.	
,, Eucalypti Gummi	2 to 4 dr.	2
,, Euphorbiæ Piluliferæ	2 oz.	2
,, *Gossypii Radicis Corticis*	½ to 2 oz.	
,, *Granati Radicis*, 1 in 5	½ to 2 oz.	
,, *Hæmatoxyli*	½ to 2 oz.	2
,, Hordei, B.P. 1885	*ad lib.*	
,, *Hygrophilæ*	½ to 2 oz.	
,, *Isphaghulæ*	½ to 2 oz.	
,, Pareiræ, B.P. 1885	1 to 2 oz.	
,, *Sappan*	½ to 2 oz.	x
,, Sarsæ, B.P. 1885	2 to 10 oz.	
,, Sarsæ Compositum, B.P. 1885	2 to 10 oz.	
,, Scoparii, B.P. 1885	2 to 4 oz.	
,, Taraxaci, B.P. 1885	2 to 4 oz.	
,, Tritici	2 to 8 oz.	
,, Ulmi	...	
Deelina Oil	...	
De-emetinised Ipecacuanha	5 to 20 gr.	
Delafield's Hæmatoxylin Solution	...	
Delphina	¼ to ½ gr.	

NAME.	DOSE.	PAGE
naturalised Methylated Spirit		62
pilatories		114, 141
Rehze's Solution		475
rmatol		125
rmosapol		378
siccated Blood		253
Valangin's Mineral Solvent		95
veloper, Photographic		445
xtroform		68
xtrose		271
abene		333
abetin		467
acetic Acid, Test for		593
acetyl-tannin	3 to 8 gr.	46
,, -Morphine Hydrochloride	1-12 to 1-6 gr.	357
achylon Plaster		374
alysed Iron	10 to 30 m.	259
amido-azo-benzene Hydrochloride		159
amidophenol Hydrochloride, p.—Amidol, a Photographic Developer...		
ethyl-malonyl-urea	7 gr.	515
apers of Wood Wool		419
arrhœa Mixture		123
astase, Malt		343
,, *syn.* Maltine		343
,, Pancreatic		387
azo Test for Typhoid, Ehrlich's		622
bromo-gallic Acid		17
dymii Salicylas		37
dymin		569
thylene-diamine	4 to 10 gr.	419
gestive Salt		476
gitalein (Schmiedeberg)		237
italine, Crystallized (Nativelle) Codex	$\frac{1}{250}$ to $\frac{1}{60}$ gr.	236
,, Granules (Homolle) ...	... 2 to 4	236
,, Amorphe (Chloroformic) ..	1-60 to 1-30 gr.	236
italinum Crystallisatum		237
,, Pulverisatum Purum Germanicum,	1-64 to 1-32 gr.	237
italis Folia	½ to 2 gr. ...	235
itonin		237
itoxin	... $\frac{1}{250}$ to $\frac{1}{64}$ gr.	237
hydroxyphthalophenon	½ to 4 gr.	16
ododithymol, *syn.* Aristol		314
iodoform		315
Iodo-Para Phenol-Sulphonic Acid		317

NAME.	DOSE.	PAGE
Dimatos		334
Dimethyl-Amido-Azo-benzol Solution		613, 615
,, -Ethyl-carbinol	30 to 80 m.	82
,, -Ethyl-carbinol-chloral	5 to 50 m.	83
,, -Ketone	1 to 1½ dr.	63
,, -Piperazine Tartrate	4 to 10 gr.	420
,, Benzene		184
Dimethylene-Tartrate		67
Dinitro-cellulose		217
Dinner Tablets		427
Dionin	¼ to ½ gr.	357
Dioscorides Granules		95
Dioxybenzol-hexamethylene-tetramine	7½ to 30 gr.	422
Diphenylamin		23
Diphtheria Serum and Antitoxin (Dried 546)		544
,, Bacillus		616
,, Pigment for, Löffler's		258
Discs, *vide* Ophthalmic Discs.		
Di-Sodium Methyl-arsenate	2-5 to 3 gr.	101
Dita Bark and Ditaine		528
Dithion	3 gr.	36
Di-thymol-iodide		314
Diuretin	5 to 15 gr.	503
,, Lithium	5 to 15 gr.	505
Dobell's Collunarium		13
Dogwood, Jamaica		423
Dolichos Pubes		267
,, Soja		537
Donovan's Solution	5 to 20 m.	97
Doremus Ureometer		608
Dormiol	5 to 50 m.	83
Dover's Powder (Pulv. Ipec. Co.)	5 to 15 gr.	325
Dowsing Radiant Heat		448
Dragendorff's Reagent		124
Drosera Rotundifolia		531
Duboisinæ Sulphas	1-120 to 1-30 gr.	238
Dulcin		467
Dunham's Tassel		614
Duotal	3 to 8 gr.	230
Durine		66
Dusart's Syrup	½ to 1 dr.	22
Dusting Powder, Lysoform		69
Dymal		37
Dysentery, Anti-Serum		548
Ear Cones		112
Earth Nut Oil		xxii

Name.	Dose.	Page
Easton's Syrup	½ to 1 dr.	264
Eau de Botot		40
,, Dentifrice, Pierre's		40
,, de Cologne		62
,, de Goudron	5 to 10 oz.	423
,, de Labarraque		188
,, de Luce		79
,, Sedative de Raspail		143
Ecballium Elaterium		239
Effervescent Salts:		
Acetanilide (Antifebrin), 1 and 3 gr. in 1 dr.,	1 dr. or more	181
Ammonium Bromide, 5 gr. in dr.	1 dr. or more	76
,, Salicylate, 10 gr. in dr.	1 dr. or more	35
Antipyrine, 5, 10, and 15 gr. in dr.	1 dr. or more	191
Bismuth Citrate, 5 gr. in dr.	1 dr. or more	
Bromine Salts		477
Caffeine (base), 3 gr. in dr.	1 dr.	134
Caffeine Citrate, 4 per cent.	1 or 2 dr. ...	134
Caffeine Citrate 2½ with Pot. Brom. 5 gr. in dr.	1 or 2 dr.	135
,, Hydrobromide 2½ gr. in dr. ...	,,	135
Carlsbad Salt	1 dr. or more	484
Chloro-Sodio-Magnesian Aperient	,,	484
Glycerophosphates	1 dr.	27
Iron and Quinine Citrate, 3 gr. in dr.	1 or 2 dr.	426
Lithium Citrate, 5 per cent.	,,	340
,, Salicylate, 2 gr. in dr.	1 dr. or more	341
Magnesium Citrate	As a saline, 1 or 2 dr.	
,, *Sulphate*	¼ to 1 oz.	342
Phenacetin, 5 and 10 gr. in dr.	1 dr. or more	189
,, and Caffeine, B.P.C.	1 or 2 dr.	190
Piperidine Tartrate, 5 gr. in dr.	1 dr. or more	231
Piperazine, 5 gr. in dr. ...	,,	420
,, with Phenocoll, 5 gr. each in dr.	,,	420
,, Quinate, 5 per cent.	,,	421
Potassic Aperient	,,	429
,, ,, with Pot. Sulphocarbolate	,,	429
Potassium Citrate	1 or 2 dr.	
Pullna Salt...	1 dr. or more	483
Quinine Citrate, 1 gr. in dr.	,,	435
,, Salicylate, 1 gr. in dr.	,,	439
Sal Bromatum		477
Salicin, 5 gr. in dr.	1 dr. or more	39
Salicylic Acid, 5 gr. in dr.	,,	34
Sodio-Magnesian Aperient	,,	483
,, ,, ,, with Caffeine	,,	481

Name	Dose.	Page
Effervescent Salts:		
Sodium Benzoate, 6 gr. in dr. ...	... 1 dr. or more	2
Sodium Citro-Tartrate	... 1 or 2 dr.	
,, Phosphate	,,	481
,, ,, (*Off.*) ...	... ¼ to ½ oz.	481
,, Salicylate, 5 and 10 grs. in dr	... 1 dr. or more	36
,, Sulphate	,,	483
,, ,, (*Off.*) ...	... ¼ to ½ oz.	483
Strontium Bromide 10 gr. in dr. ...	1 or 2 dr.	489
Sulphonal, 5 gr. in dr.	.. 1 dr. or more	496
Vichy Salt	...1 dr. or more	
Ehrlich's Diazo Test for Typhoid Fever		622
,, Haematoxylin Solution		601
,, Indican Test		607
,, Biondi Heidenhain Mixture		600, 601
,, Side-chain Theory		540
,, Triacid Stain...		601
,, Triple Stain		601
,, Acidôphilous Mixture		601
Einhorn's Stomach Bucket		614
Eikonogen...		360
Ektogan		300
Elæosacchara		238
Elaterinum...	1-40 to 1-10 gr.	239
Elaterium	1-10 to ½ gr.	239
Elecampane		533
Elepizone	... 1 dr.	477
Elixir Acidum	... 2 to 8 m.	43
,, Aromaticum	...½ to 2 dr.	239
,, Bismuthi	60 m.	120
,, Camphoræ..	30 to 60 m.	143
,, Camphoræ Monobromatæ	4 dr.	144
,, Cascara Sagrada	...15 to 120 m.	153
,, Chloralamidi	... 1 oz.	160
,, Cinchonæ	... 30 to 60 m.	174
,, Cocæ	... 1 to 4 dr.	197
,, Ferri Phosphatis cum Quinina et Strychnina	1 dr.	205
,, Ficorum	... 1 to 4 dr.	210
,, Glusidi, *syn.* Saccharini ...	... 5 to 20 m.	466
,, Glycerophosphatum	... 1 to 4 dr.	27
,, Guaranæ	...30 to 120 m.	280
,, Ipecacuanhæ	...10 to 30 m.	325
,, Papain	1 dr. with meals	391
,, Paraldehydi	... 1 to 3 dr.	64
,, Phosphori...	15 to 60 m.	403
,, Rhei	1 to 3 dr.	249

NAME.	DOSE.	PAGE
Elixir Rubrum	20 to 60 m.	240
,, Saccharini, 3 gr. in 60 m.		466
,, Sennæ	1 to 3 dr.	471
,, ,, Leguminorum	1 to 3 dr.	471
,, Simplex	20 to 60 m.	240
,, Sodii Cacodylatis Standardised	30 m.	99
,, *of Vitriol*	5 to 20 m.	43
Elm		538
Embelia	1 to 4 dr.	xx
Emblic Myrobalans	1 or 2	241
Emetina (Mxd. Alkaloid)	Expect. $\frac{1}{100}$ to $\frac{1}{25}$, Emetic $\frac{1}{8}$ to $\frac{3}{8}$ gr.	326
,, Hydrochloridum Expectorant	$\frac{1}{100}$ to $\frac{1}{25}$ gr.	327
,, Hydrobromidum Expectorant	$\frac{1}{100}$ to $\frac{1}{25}$ gr.	327
Emetin (Extractive)	Expect. $\frac{1}{15}$ to $\frac{1}{10}$, Emetic $\frac{1}{2}$ to 1 gr.	327
Emodin		73, 153, 470
Emol		334
Emplastra I.C.Add.		xxiv.
Emplastrum Aconiti et Belladonnæ		50
,, *Belladonnæ*		116
,, Belladonnæ Extensum		116
,, ,, Fluidum		116
,, ,, Viride		116
,, *Calefaciens*		147
,, *Cantharidis*		149
,, Capsici		150
,, Cocainæ		200
,, Cyllin		179
,, Diachylon		374
,, Hamamelidis		283
,, Hydrargyri Stearatis		373
,, *Menthol*		349
,, *Mylabridis*		xxi
,, ,, *Calefaciens*		xxi
,, *Opii*		384
,, *Picis*		424
,, *Plumbi*		374
,, ,, *Iodidi*, 1 in 10		
,, Resinæ		374
,, Saponis		374
,, Scopolæ		536
,, Thapsiæ		538
,, Vesicans		149
Emulsin		79, 472
Emulsio Chloroformi		169
,, Iodoformi		312
,, Olei Morrhuæ	2 to 8 dr.	378

NAME.	DOSE.	PAGE.
Emulsio Olei Morrhuæ et Glycerophosphatum	2 to 8 dr.	28
,, ,, cum Hypophosph.	2 to 8 dr.	378
,, Paraffini (Shaving Cream)		393
,, Petrolei cum Hypophosph.	1 to 4 dr.	395
,, ,, ,, Acid Cinnamic	1 to 4 dr.	395
,, Salol	½ to 1 oz.	40
Emulsion, Pancreatic	1 to 3 dr.	389
Enema Magnesii Sulphatis	½ to 2 oz.	342
,, ,, ,, Henry		343
,, ,, ,, Acidi		343
Eosin Solution	5 per cent.	600
,, Gram-Weigert Method		623
Eosote	4 to 12 gr.	227
Ephedrine		110
Epicarin, *syn.* Epicarinum purum		360
Erasmus Wilson's Hair Wash		78
Ergoapiol		84
Ergot	20 to 60 gr.	241
,, of Maize		534
Ergotinum, syn. Extractum Ergotæ	2 to 8 gr.	242
Ergotininæ Citras	1-150 to 1-30 gr.	243
Ergotinine	1-200 to 1-40 gr.	243
,, Cristallisée		243
Erigeron Canadense	5 to 30 m.	531
Eriodictyon Glutinosum		539
Erythrol Nitrate (Tetranitrate)	½ to 1 gr. increased	244
Erythrophlœinæ Hydrochloridum	1-40 to 1-24 gr.	245
Erythrophlœum		245
Erythroxylum Coca and E. Bolivianum	30 to 120 gr.	196
Esbach's Picric Acid Solution		594
Eserina, Eserine	$\frac{1}{100}$ to $\frac{1}{50}$ gr.	411
Eserinæ Hydrobromidum	1-60 to 1-20 gr.	411
,, Salicylas	1-60 to 1-20 gr.	411
,, Sulphas	1-60 to 1-20 gr.	411
Essence of Beef		251
,, ,, Restorative		252
,, ,, ,, Peptonised		252
,, of Rennet		398
Essentia Anisi, B.P. 1885	10 to 20 m.	
,, Menthæ Piperitæ, B.P. 1885	10 to 20 m.	
Ether	40 to 60 m., or 10 to 30 m. repeated	51
,, Absolute and Methylated		52, 53
,, *Acetic*	60 to 90 m., or 20 to 40 m. repeated	54
,, Chloric		169
,, Hydriodic		5
,, Hydrobromic		5

Name.	Dose.	Page
Ether Hydrochloric		56
,, Ozonic	½ to 1 dr.	299
,, Perles	3 m. in each	49
,, *Petroleum*		396
,, Phosphorated	1 to 10 m.	402
,, Soap		470
,, ,, with Mercuric Iodide		470
,, *Sulphuric*	10 to 60 m.	51
Ethereal Tinctures		51
Ethyl Bromide		54
,, Carbamate	10 to 60 gr.	515
,, Chloride		56
,, ,, Metal Cylinders		56
,, ,, Tubes for General Anæsthesia		56
,, ,, ,, Local ,,		56
,, ,, with Carbolic Acid, 2 per cent.		56
,, ,, with Cocaine Hydrochloride (Saturated)		56
,, ,, with Iodoform (Saturated)		56
,, ,, and Nitrous Oxide, combined use		57
,, Hydrogen Sulphate		51
,, Hydroxide		59 *et seq.*
,, Iodide		58
,, Nitrite		54
,, ,, *Solution of*	20 to 60 m.	54
,, Oxide	10 to 60 or 10 to 60 m. repeated	51
thylene		611
thylene Bromide	1 to 2 m.	55
,, -diamine Mercuric Sulphate		283
,, -diamine-silver Phosphate		90
,, -Ethenyl-diamine	10 to 30 m.	420
,, Tartras (Lysidin Tart. Acid)		421
,, Periodide		315
thylenimine	4 to 10 gr.	419
thyl-Morphine Hydrochloride	¼ to ½ gr.	357
thyl-sulphate of Sodium	¼ to 1 oz.	485
thylic Alcohol		59
thylised Chloral Urethane	30 to 45 m.	161
ucainæ Hydrochloridum B		210
ucaine and Adrenalin, combined use		211
,, Powders (Barker)		211
ucalyptene Hydrochloride	2 to 6 gr.	247
ucalypteol	2 to 6 gr.	247
ucalypti Folia	5 gr. or more	246
,, *Gummi*	2 to 5 gr.	248
,, *Oleum*	½ to 3 m.	246
ucalyptol	1 to 4 m.	247

NAME.	DOSE.	PAGE
Eucalyptol Phosphate	... 1 to 5 gr.	247
Eucasein	... ...	254
Euchinin	... 3 to 15 gr.	443
Eudermol	... ...	364
Eudoxin	... 3 to 8 gr.	317
Eugallol	... ...	30
Eugenia Jambolana	... ...	333
Eugenol, *syn.* Eugenic Acid	... ...	531
,, Acetamide	... ...	531
Eumenol	... ...	531
Eumydrine	... ...	110
Eunatrol	... ...	470
Euonymi Cortex	... ...	249
Euonymin, syn. *Extractum Euonymi Siccum*	1 to 2 gr.	250
Euphorbia Pilulifera	... ...	250
Euphorin	3 to 6 gr.	516
Euphthalmine Base	... ...	111
,, Hydrochloride...	... ...	110
,, Salicylate	... ...	111
Euquinine...	... 3 to 15 gr.	443
Euresol	... ...	463
Eurobin	... ...	171
Europhen	... ...	315
Ewald's Test Breakfast...	... ...	615
Exalgin	... ½ to 2 gr.	185
Exodin	... 7½ to 2 gr.	155
Extract, Brain	... 5 to 20 m.	566
,, Eye	... 2 dr.	567
,, Red Bone Marrow	... 1 to 2 dr.	565
,, Retinal	... 2 dr.	567
,, Spinal Cord	... 5 to 20 m.	566
,, Thymus Gland	... ½ to 2 dr.	571
Extracta Liquida, I.C. Add.	... ...	xxiv
Extractum Acalyphæ Liquidum ...	... 5 to 30 m.	xviii
,, Aconiti	... ¼ to 1 gr.	50
,, ,, Radicis Alcoholicum	1-10 to 1-3 gr.	50
,, *Adhatodæ Liquidum* ...	... 20 to 60 m.	xviii
,, Aesculi Hippocastani Liquidum	... ...	527
,, *Agropyri Liquidum* ...	... 1 to 2 dr.	511
,, Aletridis ,, ...	... 15 to 30 m.	527
,, Allii	... 4 to 10 gr.	527
,, *Aloes Barbadensis*	... 1 to 4 gr.	70
,, ,, Socotrinæ	... 2 to 4 gr.	70
,, *Anthemidis*	... 2 to 8 gr.	528
,, *Belæ Liquidum*	... 1 to 2 dr.	xix
Belladonnæ Alcoholicum ...	¼ to 1 gr.	11

NAME.	DOSE.	PAGE
Extractum Belladonnæ Folii Alcoholicum...	... ...	117
,, ,, *Liquidum*	⅓ to 1 m.	117
,, ,, *Viride*	¼ to 1 gr.	117
,, Bynes	1 to 4 dr.	344
,, ,, Liquidum	1 to 4 dr.	344
,, Cacti Grandiflori Liquidum	1 to 10 m.	530
,, Calumbæ, B.P. 1885	2 to 10 gr.	
,, *Cannabis Indicæ*	¼ to 1 gr.	145
,, Carnis...	... ...	251
,, *Cascaræ Sagradæ*	2 to 8 gr.	153
,, ,, ,, *Liquidum*	30 to 60 m.	153
,, ,, ,, Insipidum	½ to 2 dr.	154
,, Cassiæ Beareanæ Liquidum	30 to 60 m.	530
,, Cerebri Liquidum ...	5 to 20 m.	566
,, Chelidonii Liquidum	10 to 30 m.	530
,, Chekan Fluidum	½ to 3 dr.	530
,, Chinæ...	1 to 4 gr.	175
,, *Cimicifugæ Liquidum*	5 to 30 m.	172
,, Cinchonæ Flavæ Liquidum	10 to 30 m.	175
,, ,, *Liquidum*	5 to 15 m.	175
,, *Cissampeli Liquidum*	½ to 2 dr.	xx
,, Cocæ	2 to 15 gr.	197
,, ,, *Liquidum*	½ to 1 dr.	197
,, *Colchici*	¼ to 1 gr.	216
,, ,, Aceticum, B.P. 1885	½ to 2 gr.	
,, Collinsoniæ Liquidum	15 to 60 m.	530
,, *Colocynthidis Compositum* ...	2 to 8 gr.	70
,, Condurango Liquidum	10 to 60 m.	219
,, Conii, B.P. 1885	2 to 6 gr.	
,, ,, Liquidum	5 to 15 m.	221
,, Convallariæ	2 to 8 gr.	222
,, ,, Fluidum	2 to 10 m.	222
,, Corn Silk, *syn.* Maidis Stigmata	20 gr. fl. 1 dr.	534
,, Coto Liquidum	2 to 6 m.	222
,, Damianæ	2 to 10 gr.	234
,, ,, Liquidum...	½ to 1 dr.	234
,, Digitalis, U.S., semi-alcoholic	1-6 to ½ gr.	
,, ,, Fluidum, ,, ,,	1 to 20 m.	
,, *Ergotæ*	2 to 8 gr.	242
,, *Ergotæ Liquidum* ...	10 to 30 m.	241
,, ,, Fluidum U.S.	... ...	243
,, Erigeron Liquidum	30 to 60 m.	531
,, Erythroxyli Fluidum	½ to 1 dr.	197
,, Eucalypti Gummi Liquidum	30 to 60 m.	249
,, Euonymi Liquidum	10 to 60 m.	250
,, ,, *Siccum*	1 to 2 gr.	250

NAME.	DOSE.	PAG
Extractum Euphorbiæ Piluliferæ ...	½ to 1½ gr.	25
,, Ferri Pomatum		26
,, *Filicis Liquidum*	45 to 90 m.	26
,, Frangulæ Liquidum ...	... 1 to 4 dr.	46
,, Fuci Vesiculosi	... 3 to 10 gr.	26
,, ,, ,, Liquidum	... 1 to 2 dr.	26
,, Galii	... 5 to 20 gr.	53
,, Gelsemii Alcoholicum ...	½ to 2 gr.	27
,, ,, Liquidum ...	... 5 to 10 m.	22
,, *Gentianæ*	... 2 to 8 gr.	
,, Geranii Maculati Fluidum	... 15 to 60 m.	53
,, Glandulæ Thyroideæ Liquidum	... 5 to 15 m.	57
,, Glaucii Liquidum	... 1 dr.	53
,, *Glycyrrhizæ*	... 5 to 60 gr.	22
,, ,, *Liquidum* ...	30 to 60 m.	22
,, ,, *Spirituosum* ...	½ to 1 dr.	xx, 2
,, Gossypii Radicis Corticis ...	1 to 4 gr.	xx, 2
,, ,, ,, ,, *Liquidum*	½ to 1 dr.	2
,, Grindeliæ	... 2 to 3 gr.	22
,, ,, *Liquidum* ...	10 to 20 m.	xx, 2
,, Hæmatoxyli Liquidum ...	½ to 2 dr.	2
,, Hamamelidis Destillatum	... ½ to 3 dr.	2
,, ,, *Liquidum* ...	... 5 to 15 m.	28
,, Hæmostaticum		2
,, Humuli	... 2 to 6 gr.	3
,, ,, Liquidum	... 5 to 10 m.	3
,, Hydrastis	... 2 to 5 gr.	2
,, ,, *Liquidum* or Fluidum	5 to 15 m.	2
,, *Hyoscyami Viride*	... 2 to 8 gr.	
,, Ignatiæ amaræ Liquidum	... 1 to 10 m.	3
,, *Ipecacuanhæ Liquidum*	Expectorant ½ to 2m. Emetic ... 15 to 20 m.	3
,, Jaborandi	... 2 to 10 gr.	3
,, ,, *Liquidum* ...	... 5 to 15 m.	3
,, *Jalapæ*	... 2 to 8 gr.	3
,, Jambul Liquidum ...	... ½ to 2 dr.	3
,, Kavæ	... 5 to 10 gr.	5
,, ,, *Liquidum*	30 to 60 m.	xxi,
,, Kolæ Liquidum	10 to 20 m.	1
,, *Krameriæ*	... 5 to 15 gr.	3
,, ,, Fluidum, U.S.P.	... 10 to 60 m.	
,, Lactucæ, B.P. 1885... ...	... 5 to 15 gr.	
,, Lupuli, B.P. 1885	... 5 to 15 gr.	
,, Maidis Stigmatum	20 gr.	
,, ,, ,, Fluidum ...	1 dr.	
,, ,, Ustilaginis Fluidum	... ½ to 2 dr.	

NAME.	DOSE.	PAGE
Extractum Malti	1 to 4 dr.	344
,, ,, Ferratum	1 to 4 dr.	344
,, ,, Liquidum	1 to 4 dr.	344
,, ,, cum Oleo Morrhuæ ...	1 to 4 dr.	344
,, Menyanthis et Glycyrrhizæ Liquidum	½ oz.	534
,, Myrtilli Liquidum	1 oz.	534
,, *Nucis Vomicæ*	¼ to 1 gr.	370
,, ,, ,, *Liquidum*	1 to 3 m.	370
,, *Opii* (20 % Morphine) ...	¼ to 1 gr.	384
,, ,, *Liquidum* (0·75 % Morphine)	5 to 30 m.	384
,, Pancreatis (Fairchild)		387
,, Papaveris, B.P. 1885 ...	2 to 5 gr.	
,, Pareiræ, B.P. 1885 ...	10 to 30 gr.	
,, ,, *Liquidum*	30 to 120 m.	
,, *Physostigmatis*	¼ to 1 gr.	410
,, Pichi Liquidum	10 to 60 m.	535
,, *Picrorhizæ Liquidum*	20 to 60 m.	xxii
,, Pini Canadensis Liquidum ...	10 to 60 m.	535
,, Pini Sylvestris		418
,, Piscidiæ	2 to 5 gr.	423
,, ,, Liquidum... ...	20 to 120 m.	423
,, Pruni Virginianæ Fluidum, U.S.P. 1 = 1	5 to 20 m.	431
,, Quassiæ, B.P. 1885...	3 to 5 gr.	
,, Quebracho Liquidum	5 to 10 m.	433
,, Retinale	2 dr.	567
,, Rhamni Frangulæ	15 to 60 gr.	464
,, ,, ,, Liquidum ...	1 to 4 dr.	464
,, ,, *Purshiani*...	2 to 4 gr.	153
,, ,, ,, *Liquidum* ...	30 to 60 m.	164
,, *Rhei*	2 to 8 gr.	
,, Rubi Chamæmori Liquidum ...	½ to 1 dr.	536
,, Salicis Nigræ Liquidum	¼ to 1 dr.	536
,, *Sarsæ Liquidum*	2 to 4 dr.	
,, Scopolæ	1-8 to ½ gr.	536
,, ,, Liquidum...	1 to 5 m.	536
,, Senecionis Liquidum	20 to 60 m.	537
,, Sennæ Leguminorum Liquidum...	1 to 2 dr.	472
,, Sorbi Aucupariæ Liquidum ...	10 to 30 m.	537
,, Spigeliæ Fluidum, U.S. 1=1		
,, Stillingiæ Fluidum... ...	15 to 60 m.	488
,, *Stramonii*	¼ to 1 gr.	
,, *Strophanthi*	¼ to 1 gr.	491
,, Supra-renal Liquidum	10 to 15 m.	571
,, ,, Siccum	½ to 3 gr.	571
,, *Taraxaci*	5 to 15 gr.	

Name.	Dose.	Page
Extractum Taraxaci Liquidum	½ to 2 dr.	
,, Thyroidei Liquidum = Liquor		57
,, Tritici Liquidum	1 to 2 dr.	51
,, Tulipæ		53
,, Uvæ Ursi Liq.	20 to 40 m.	52
,, Valerianæ	1 to 5 gr.	51
,, ,, Liquidum	20 m.	51
,, Verbasci Liquidum, 1 = 1	5 to 20 m.	
,, Viburni Prunifolii	2 to 10 gr.	51
,, ,, ,, Liquidum	60 to 120 m.	xxi
,, Vincæ Majoris Liquidum	1½ dr.	53
,, Violæ Liquidum	1 dr.	53
,, Yerbæ Santæ	10 to 40 m.	53
Eye, Extracts from		56
Faex Medicinalis	½ to 1 oz.	15
Farrant's Mounting Medium		62
Fat Globules in Urine		59
Fehling's Solution		60
,, ,, Allen's Modification		60
,, ,, Pellets of		60
Fel Bovinum Purificatum	5 to 15 gr.	25
,, Exsiccatum	5 to 10 gr.	25
Fermentation as a Glucose Test		60
Ferments—Digestive		38
Ferratin	8 to 15 gr.	26
Ferri Albuminati, Liquor	1 to 4 dr.	26
,, Alginas, Alginoid Iron		52
,, *Arsenas*	1-16 to ¼ gr.	9
,, Bromidum	3 to 10 gr.	25
,, Cacodylas	¾ to 5 gr.	9
,, *Carbonas Saccharatus*	10 to 30 gr.	25
,, *et Ammonii Citras*	5 to 10 gr.	
,, ,, ,, Sulphas	3 to 10 gr.	26
,, ,, Magnesii Sulphas	2 to 10 gr.	26
,, ,, Manganesii Citras	3 to 15 gr.	26
,, ,, *Quininæ Chloridum*	1 to 3 gr.	4
,, ,, ,, *Citras*	5 to 10 gr.	4
,, ,, ,, ,, Effervescens	1 dr.	4
,, ,, Quininæ et Strychninæ Citras	3 to 6 gr.	436,4
,, ,, Strychninæ Citras	3 to 6 gr.	4
,, Fluoridum	$\frac{1}{20}$ to ½ gr.	
,, Glycerophosphas	1 to 5 gr.	
,, Hypophosphis	1 to 5 gr.	406,4
,, Iodidum	1 to 5 gr.	
,, Lactas	1 to 5 gr.	
,, Lactophosphas (in Syrup)		

NAME.	DOSE.	PAGE
Ferri Nucleinas		157
,, Oxidum Magneticum	5 to 10 gr.	
,, Oxypersulphas (Monsel's Salt)		266
,, Peptonati, Liquor	1 to 4 dr.	261
,, Perchloridum	2 to 8 gr.	257
,, Peroxidum Humidum	2 to 4 dr.	
,, *Phosphas*	5 to 10 gr.	263
,, ,, Solubilis, U.S.	2 to 8 gr.	263
,, Pyrophosphas, U.S.	2 to 8 gr.	409
,, Saccharatum, U.S.P. = 20 per cent. Ferrous Iodide		
,, Salicylas	3 to 10 gr. or more.	35
,, Succinas		430
,, *Sulphas*	1 to 5 gr.	265
,, ,, *Exsiccatus*	½ to 3 gr.	265
,, Valerianas	3 to 5 gr.	517
Ferrichthol		310
Ferrier's Snuff (Pulvis Bismuthi Comp.)		124
Ferripyrin, Ferropyrin	3 to 8 gr.	192
Ferro-Alumen	3 to 10 gr.	266
Ferrocyanic Acid Test Pellets		591
Ferro Manganese Citrate	3 to 10 gr.	345
,, ,, with Quinine	3 to 5 gr.	345
,, ,, ,, Strychnine	1 gr.	345
,, ,, Phosphate	3 to 10 gr.	345
,, -Somatose	75 to 150 gr. daily	253
Ferrum		255
,, Dialysatum		259
,, Oxydatum Saccharatum	10 to 40 gr.	260
,, *Redactum*	1 to 5 gr.	
,, *Tartaratum*	5 to 10 gr.	
Fersan	30 to 80 gr.	251
Fig Syrup	1 to 4 dr.	240
Filix Mas		266
Finsen Lamp		419
,, Reyn Lamp		419
Fir Wool, Oil, and Extract		417, 418
Fish Poisoning		432
Flagella Stains		621
Fleabane		531
Fleming's Tincture of Aconite	1 to 5 m.	51
Flemming's Liquor Acidi-Chromo-Aceto-Osmici		24
Flowers of Camphor	1 to 10 gr.	142
Fluoresceïn		183
Fluoride of Ammonium	1-24 to ⅙ gr. (max. 4 gr.)	20
,, Iron	1-20 to ½ gr.	21
,, Quinine	1-20 to ½ gr.	21

Name.	Dose.	Page
Fluor-rheumin		21
Folia Stramonii Nitrata		429
Food Preservatives		4, 32
Foot Powder		75
Formaldehydum Solutum		65
Formalin		65
,, -Gelatin		68
,, Gargle...		68
,, Inhalant		67
,, Disinfecting Tablets		69
Formamide		295
Formic Aldehyde, Formol		65
Formin	5 to 15 gr.	421
Formoform		68
Formyl Terchloride	1 to 5 m.	161
Fortoin	4 gr.	223
Fotus Acid Borici, K.C.H., 6 dr. to 1 pint.		
,, Belladonnæ, K.C.H., 1 to 2 dr. of Tinct. on flannel rung out hot.		
,, Opii, K.C.H., ½ to 1 dr., as latter.		
,, Papaveris, K.C.H., 2 ozs. to 1½ pints boiled 15 minutes: foment at 120°F.		
Fowler's Solution of Arsenic	2 to 8 m.	91
Frangula Bark		461
Frankincense		417
Freezing Mixtures		641
French Chalk		335
,, Oil of Turpentine	30 m. every ½ hour	401
Friar's Balsam		72
Fröhde's Reagent		44
Fuchsine	½ to 4 gr.	186
,, Solution (stain)		619
Fucus Vesiculosus		267
Fuller's Earth		334
Fumitory, Hollow-rooted		530
Fumus Potassii Nitratis		428
Fungus Laricis		527
Furfuraldehyde		59
Furunculin	one teaspoonful	156
Gabbett's Stain for Tubercle Bacilli		619
Galbanum	5 to 15 gr.	
Galium Aparine		531
Galla	5 to 15 gr.	
Gallacetophenone		31
Gallanol		186
Gallobromol	5 to 15 gr.	17

NAME.	DOSE.	PAGE
Gamboge	½ to 2 gr.	xix
Gardner's Syrupus Acidi Hydriodici	1 to 3 dr.	323
Garfield Tea		472
Garlic	½ to 2 dr.	527
Gargarisma Chlori		478
,, Formaldehydi, G.H.		68
,, Potassii Chloratis		478
Gas, Carbon Monoxide		611
,, ,, Dioxide		611
,, Coal		611
,, Water		611
Gaubius' Table of Dosage		577
Gaultheriæ, Oleum	3 to 10 m.	33
Gauze-covered Moss		487
Gelanthum		509
Gelatin Basis, for Skin		523
,, Capsules		394
,, ,, soft		394
,, Glycerin		274
,, Injections		268
,, Nutrient		625
Gelatina Alba		268
,, Zinci Dura		524
Gelatinum Copaibæ		382
,, Zinci		523
Gelatum Petroleum		393
,, Zinci, V.C.H.		523
,, Zincum		523
Gelidium Corneum		527
Gelsemin (Eclectic)	½ to 2 gr.	270
Gelseminina	1-100 to 1-32 gr.	270
Gelsemininæ Hydrochloridum	1-60 to 1-20 gr.	270
Gelsemii Radix	5 to 15 gr.	269
Genêt à Balais		486
Geoline		394
Geosote		230
Geranin	1 to 5 gr.	531
Geranium Maculatum		531
Gerrard's Solution		604
Ghâti or Ghatti Gum		xx
Gibbes' Double Stain		619
Gingerin	¼ to 1 gr.	271
Glacialine		4
Glandulen		566
Glaser's Salt	30 to 120 gr.	430
Glass, Soluble, or Water Glass		482

Name.	Dose.	Pag
Glauber's Salt		48
Glaucine		53
Glaucium Luteum		531
Glonoin, Solution of, *syn.* Liq. Nitroglycerini,	½ to 2 m.	36
Glucantha		414, 50
Glucose		271
Glucose, Agar		62
,, Broth		62
,, Gelatin		62
,, Tests for, in Urine		60
,, Tubes		271
Glucusimide	½ to 2 gr.	46
Glusidum, Gluside	½ to 2 gr.	46
Glutol		6
Glycaphorm	1 to 2 dr.	35
Glycerin Agar		62
,, Broth		62
,, Jelly		27
,, ,, Lubricant		273, 61
,, ,, Microscopic		27
,, Soap, Liquid		47
,, Suppositories		27
,, and Soap Suppositories		27
,, Tinctures		50
,, in Urine		60
Glycerinum	1 to 2 dr.	27
,, *Acidi Borici*, 6 in 20		
,, ,, *Carbolici*, 1 in 5		1
,, ,, *Tannici*, 1 in 5		27
,, *Aluminis*, 1 in 6		27
,, ,, et Acidi Tannici		27
,, *Amyli*, 1 to 8		27
,, Atropinæ		10
,, Belladonnæ		11
,, Bismuthi Nitratis, 60 gr. to 1 oz.		27
,, *Boracis*, 1 to 6		27
,, Carmini		15
,, cum Aquâ Rosæ		27
,, Ferri Dialysati	30 to 60 m.	26
,, ,, Perchloridi		25
,, Glycerophosphatum Compositum	1 to 2 dr.	2
,, Hydrargyri Perchloridi		29
,, Iodi (Morton's Fluid)		18, 31
,, Iodoformi		31
,, Papain	1 dr. with meals	3
Pepsini	½ to 2 dr.	38

NAME.	DOSE.	PAGE
Glycerinum Phosphori = Elixir	15 to 60 m.	403
,, *Plumbi Subacetatis*		273
,, Resorcin		462
,, Sodii Cinnamatis, 10 per cent. Sol.	30 to 60 m.	3
,, *Tragacanthæ*		509
,, Boroglycerini		5
,, Vitelli		274
Glycero-alcohol	5 to 60 m.	274
,, -arsenates		28
Glycerole of Diacetyl-morphine Hydrochloride	1 to 2 dr.	358
,, of Glycerophosphates	1 to 2 dr.	27
Glycerophosphate of Calcium	3 to 10 gr.	25
,, of Iron	1 to 5 gr.	26
,, Tablets	1	27
Glycin = Sodium amido-acetate, a Photographic Developer		
Glycogen	1½ to 2 gr.	532
Glyco-Gelatina Zinci Oxidi		523
Glyco-gelatin		274
,, Pastile		275
Glycoheroin	15 m. to 1 dr.	358
Glyconin		274
Glycosal	45 to 90 gr.	38
Glycothymoline		506
Glycyrrhiza	5 to 20 gr.	277
Glycyrrhizinum Ammoniatum	½ to 5 gr.	277
Gmelin's Reaction		596
Goa Powder		171
Gokhru		532
Gold		112
Gold Cures		113
Golden Seal	10 to 30 gr.	296
Gonal		382
Gonococcus		618
Gonorrhœa Bags (Wood Wool)		419
Gonosan		383
Gorit, Calcium Peroxide	3 to 9 gr.	139
Gossypii Radicis Cortex		xx
Gossypium		278
Goulard's Extract		273
Gouttes de Baumé	1 to 8 m.	371
Gowers' Glucose Test		605
,, Hæmoglobinometer		597
,, Hæmacytometer Solution		599
Gowland-Hopkins' Method of Uric Acid Estimation		608
Gram-Eosin Method		622

Name.	Dose.	Page
Gram's Method		622
,, Solution		623
Granula Dioscoridis	1 to 5	95
Granular Effervescent Glycerophosphates	60 gr.	27
Granules de Digitaline	1 or 2	236
,, ,, Cristallisée		236
,, of Aconitine	1-600, 1-250 gr.	49
,, of Digitoxin	1-250 gr.	237
,, of Hyoscyamine	1 hourly	306
Grape Sugar		271
Green Mountain Cure		429
Grenacher's Alum-Carmine		601
,, Hæmatoxylin Solution		601
Grey Powder, *syn.* Hydrargyrum cum Creta	1 to 5 gr.	
,, Oil (Mercurial)		283
Griffith's Mixture ½ to 1 oz.		257
Grindelia		xx, 279
Ground Nut Oil		xxii
Guaiacate of Lithium	5 gr.	340
Guaiacetin	8 gr.	230
Guaiaci Resina	5 to 15 gr.	279
Guaiacol	1 to 5 m.	227
,, Benzoate	4 to 12 gr.	229
,, Benzoyl-ester	4 to 12 gr.	229
,, Cacodylate	½ to 2 gr.	99
,, Camphorate	5 to 10 gr.	229
,, Carbonate	3 to 8 gr.	230
,, Cinnamate	15 gr.	230
,, Crystals	1 to 5 gr.	228
,, Phosphite, Guaiacophosphal	6 to 10 gr.	230
,, Salol	15 to 75 gr.	230
,, Valerianate	3 m.	230
Guaiaform		227
Guaiperol	5 to 30 gr.	230
Guarana	10 to 60 gr.	280
Guaranine	½ to 5 gr.	131, 280
Guäthol, Guæthol		227
Gulancha		xxiii
Gum Plant		279
Gummi Indicum		xx
Gumchi		1
Gum Thus		417
Gun-cotton		217
Günzberg's Capsule		615
Günzberg's Test for Hydrochloric Acid		615
Gurjun Balsam	½ to 2 dr.	114

Name.	Dose.	Page
Gutta-Percha		171
Guttæ Atropinæ Sulphatis, R.O.H., ¼, ½ and 1 per cent.		105
,, ,, cum Cocaina		105
,, Cocainæ Hydrochloridi		203
,, Daturinæ, ½ per cent.		234
,, Duboisinæ Sulphatis 0·25 per cent.		238
,, Euphthalminæ		111
,, Homatropinæ 1 in 100		109
,, ,, cum Cocaina		109
,, Hyoscinæ 0·5 in 100		303
,, ,, et Cocainæ		303
,, Physostigminæ 0·5 or 1 in 100		411
,, ,, cum Cocaina		411
,, Pilocarpinæ, 2 gr. in 1 oz.		330
,, Zinci Chloridi		520
,, ,, ,, cum Cocaina		521
Gutzeit's Test		94
Gynocardia Odorata		376
Gypsum		335
Gyrol Pencil		150
Hæmacytometers		598
Hæmalum		601
,, Acid		602
Hæmatein		281
Hæmatogen		253
Hæmatoxylin		281, 601
Hæmatoxyli Lignum		281
Hæmogallol	2 to 8 gr.	532
Hæmoglobin		253
,, Scale Tallquist		598
Hæmoglobinometers		597
Hæmol	2 to 8 gr.	532
Hæmotoporphyrin		597
Haffkine's Antiplague Vaccines		543
,, Cholera Vaccines		544
Hagedorn Moss		487
Hair Dye of Hydrogen Peroxide		299
,, ,, of Potassium Permanganate		316
,, ,, of Silver Nitrate		89
,, Lotion, Erasmus Wilson's		78
Haldane's Hæmoglobinometer		598
,, Carbonic Acid Apparatus		613
Haller's Acid Elixir	2 to 8 m.	43
Halvira	5 to 30 m.	532
Hamamelidin, *syn.* Hamamelin	½ to 2 gr.	282
Hamamelidis Cortex et Folia		281

NAME.	DOSE.	PAGE
Haptophile and Haptophore Groupings	...	540
Hartin's Salt	...	347
Hartmann's Wood Wool	...	419
Hartshorn and Oil	...	78
Haschisch	...	145
Haustus Cannabis Compositus, Vic. Park	...	146
,, Chloralamidi	1 oz.	160
,, Creosoti	1 oz.	224
,, Filicis Maris	1½ oz.	267
,, Imperialis, K.C.H.	...	430
,, Nitroglycerini vel Trinitrini	½ to 1 oz.	366
,, Santonini et Olei Ricini	½ oz.	468
,, Strychninæ Comp.	1 oz.	494
,, Sulphonal	1 oz.	496
,, Terebeni	...	500
,, Trional	...	497
Hay Fever Serum	...	535
Hayem's Blood Examination Fluid	...	599
,, Solution	...	475
Hay's Test for Bile Salts	...	597
Hazeline	½ to 3 dr.	282
Heart Extract	...	577
Heat Treatment, Dowsing's	...	448
Heberden's Ink	1 to 2 oz.	175
Hebra's Spiritus Saponatus	...	470
Hedonal	8 to 15 gr.	516
Heidenhain's Stain	...	601
Heim's Pills, see Pilulæ.	...	
Helenin	⅓ to 2 gr.	533
Helianthin	...	615
Heliotropin	...	532
Helium	...	457, 458
Hellebore, Black	...	518
,, Green	1 to 5 gr.	518
Heller's Blood Test	...	597
,, Nitric Acid Albumin Test	...	594
Helmitol	15 gr.	422
,, Tablets, 7½ gr.	1 or 2	422
Helonias dioica	...	532
Hematic Hypophosphites	...	409
Hemisine	...	572
Hemlock	...	220
,, Spruce	...	535
Hemp, Canadian	...	84
Henbane	...	305
Henry's Solution	...	343

Name.	Dose.	Page
Hermophenyl	1-8 gr.	295
Heroin	$\frac{1}{12}$ to $\frac{1}{6}$ gr.	357
Heto-Kresol		4
Hetol		3
Hetraline	7 to 30 gr.	422
Hexagonal Blende		454
Hexamethylenetetramine	5 to 15 gr.	421
Hexamethylentetraminbromethylate	10 to 30 gr.	127
Hexanitrin	1 gr.	245
Hiera Picra	3 to 10 gr.	73
High Frequency Current		448
Himrod's Cure for Asthma		429
Hippurates		3
Hirudo Australis		xxi
Hoff's Liquor	6 m.	95
Hoffman's Anodyne		53
Hollow Suppositories and Pessaries		276
Holocaine Hydrochloride		212
Homatropinæ Hydrobromidum	1-80 to 1-20 gr.	103, 108
,, Hydrochloridum	1-80 to 1-20 gr.	108
,, Salicylas	1-80 to 1-20 gr.	108
Homatropine		103, 108
Homolle's Granules of Digitalin		236
Honey Water		62
Houthin	3 to 15 gr.	46
Hop		341
,, pillows		341
,, smoking		341
Hopogan	1-3 to 1 dr.	300
Hopkins' Method of Estimating Uric Arid		608
Horse-chestnut		527
Huile de Cade		424
Humanised Milk		390
Humulus Lupulus		341
Huxham's Tincture of Bark	½ to 1 dr.	175
Hydramyl		396
Hydrargyri Asparaginas		295
,, Benzoas		284
,, *Bichloridum = Perchloridum*	1-32 to 1-16 gr.	289
,, Biniodidum	1-32 to 1-16 gr.	286
,, Carbolas	½ to 2 gr.	284
,, *Chloridum = Subchloridum*	½ to 5 gr.	
,, ,, Corrosivum, U.S. = Perchloridum.		289
,, ,, Mite, U.S. = Subchloridum.		
,, Cyanidum	1-20 to 1-4 gr.	285
,, Formamidum		295

NAME.	DOSE.	PAGE
Hydrargyri Gallas	½ to 1 gr.	285
,, Imido-Succinas	1-6 to ¼ gr.	293
,, *Iodidum Rubrum*	1-32 to 1-16 gr.	286
,, ,, Flavum		286
,, ,, ,, (Mercurous)	⅛ gr.	287
,, ,, Viride	1-6 to 1 or 3 gr.	287
,, Lactas	¼ gr. hyp., or *per os* 1-5 gr.	288
,, Lanolinum		337
,, Naphthol-Acetas	½ to 1 gr.	295
,, Nitras		288
,, *Nitrico-Oxidum*	¼ to 1 gr.	
,, *Oleas*		372
,, Oleatum, 5, 10, and 20 per cent.		373
,, ,, cum Morphina		373
,, Oleo-Palmitas		372
,, *Oxidum Flavum*		294
,, ,, *Rubrum*	¼ to 1 gr.	294
,, *Perchloridi Liquor*	30 to 60 m.	289
,, *Perchloridum*	1-32 to 1-16 gr.	289
,, *Pilula*	4 to 8 gr.	
,, et Potassii Iodidum	1-16 to 1-4 gr.	286
,, Salicylas	⅓ gr.	292
,, et Sodii disulphocarbolas	1-8 gr. hypod., *per os* 2-3 to 1 1-3 gr.	295
,, Stearas		372
,, *Subchloridum*	½ to 5 gr.	293
,, Succinimidum		293
,, Tannas	1½ gr. thrice daily	294
,, Thymol-Acetas	¾ to 1½ gr.	295
Hydrargyrum		283
,, *cum Cretâ*	1 to 5 gr.	
,, Colloidale		283
,, Bijodatum, P.G.=Iodid. Rub.		286
,, Jodatum, P.G.=Iodid. Vir.		287
Hydrastin (Eclectic)	½ to 2 gr.	297
Hydrastina, Hydrastine (Alkaloid)	½ to 1 gr.	296
Hydrastinæ Hydrochloridum	½ to 1 gr.	297
,, Tartras Acidus	½ to 1 gr.	297
Hydrastininæ Hydrochloridum	½ to 1½ gr.	297
Hydrastinum	½ to 2 gr.	297
Hydrastis Rhizoma	10 to 30 gr.	296
Hydride of Amyl, or Hydramyl		39
Hydriodic Ether		58
Hydriodol	3 to 6 m.	28
Hydrobromic Acid, Concentrated		1
,, ,, *Diluted*	20 to 60 m.	1

Name.	Dose.	Page
Hydrobromic Ether		51
Hydrochinon	½ to 5 gr.	302
Hydrochloric Ether		56
Hydrocotyle Asiatica	4 to 10 gr.	532
Hydrofluoric Acid		20
Hydrogen Peroxide	½ to 2 dr.	298
Hydrophobia Antitoxin		550
Hydroquinine		173
Hydroquinone	½ to 5 gr.	302
Hydroxy-butyric Acid in Urine		593
Hydroxylamine		532
,, Hydrochloride		532
Hygrophila		xxi
Hyoscina, Hyoscine		103, 302
Hyoscinæ Hydrobromidum	1-200 to 1-100 gr.	303
,, Hydrochloridum	1-200 to 1-100 gr.	304
,, Hydriodidum	1-200 to 1-100 gr.	304
Hyoscyami Folia		302, 305
Hyoscyamina, Hyoscyamine	1-120 to 1-40 gr.	103, 305
Hyoscyaminæ Hydrobromidum	1-120 to 1-40 gr.	306
,, *Sulphas*	1-200 to 1-100 gr.	306
Hyoscyamine, Amorphous	1-16 to 1-8 gr.	306
Hyperosmic Acid, Sol. 1 per cent.	2 to 10 m. daily	24
Hypnal	15 gr.	192
Hypnone	1½ to 5 m.	182
Hypobromite of Sodium, Solution		479
Hypodermic Injections, see Injectio		
,, ,, with Vaseline Oil		395
,, Purgatives:—		
Apocodeine		87
Colocynthin		219
Hypodermic Tablets, see Tablets, Hypodermic		764
Hypophosphites		406
Hyrgol		283
Ichthalbin	¾ to 15 gr.	309
Ichthargan		91
Ichthoform		309
Ichthyol, Ammon., Lith., Sodium, Zinc		307
,, Paste		308
,, Resorcin		308
,, Salicyl		309
Ignatia Amara Beans		371
Ihle's Paste		463
Immunity Units		546
Imperial Drink		430
Indian and Colonial Addendum to B.P.		xviii

NAME.	DOSE.	PAGE
Indian Hemp		145
,, ,, White		529
,, *Squill*		xxiii
Indican in Urine...		607
Indigo		607
Infiltration, Local Anæsthesia, with Cocaine		207
,, ,, with Eucaine		211
Infusum Abri		1
,, Adonidis Vernalis	4 dr.	526
,, *Alstoniæ*	½ to 1 oz.	xviii
,, *Andrographidis*	½ to 1 oz.	xviii
,, Anthemidis	1 to 4 oz.	528
,, *Aurantii*, 1 in 20 and *Compositum* ..	½ to 1 oz.	
,, *Azadirachtæ Indicæ*	½ to 1 oz.	xix
,, *Buchu*, 1 in 20	1 to 2 oz.	
,, *Calumbæ*, 1 in 20	½ to 1 oz.	
,, *Caryophylli*, 1 in 40	½ to 1 oz.	
,, *Cascarillæ*, 1 in 20	⅓ to 1 oz.	
,, *Chiratæ*, 1 in 20 (boiling)	½ to 1 oz.	
,, *Cinchonæ Acidum*	½ to 1 oz.	175
,, Cocæ	4 to 8 oz.	197
,, Condurango	½ to 2 oz.	220
,, *Coscinii*	½ to 1 oz.	xx
,, *Cuspariæ*, 1 in 20	1 to 2 oz.	
,, Cusso, 1 in 16	4 to 8 oz.	
,, *Digitalis*, 1 in 146	¼ to ½ oz.	235
,, ,, Concentratum	15 to 30 m.	235
,, *Ergotæ*, 1 in 20	1 to 2 oz.	241
,, *Gentianæ Compositum*	½ to 1 oz.	
,, ,, ,, Concentratum	½ to 1 dr.	112
,, Gokhru	20 oz. daily.	532
,, Kava-Kava	half a pint	533
,, *Krameriæ*, 1 in 20	½ to 1 oz.	
,, *Lini*, 1 in 30, Liquorice, 1 in 90 ...	*ad libitum.*	
,, *Lupuli*, 1 in 20...	1 to 2 oz.	
,, Maticæ, 1 in 20	1 to 4 oz.	
,, Menyanthis	2 to 6 oz.	534
,, *Quassiæ*, 1 in 100	½ to 1 oz.	
,, *Rhei*, 1 in 20	½ to 1 oz.	
,, *Rosæ Acidum*	½ to 1 oz.	
,, Rubi Chamæmori	½ oz.	536
,, *Scoparii*, 1 in 10	1 to 2 oz.	
,, *Senegæ*, 1 in 20	½ to 1 oz.	
,, *Sennæ*	⅓ to 2 oz.	
,, *Serpentariæ*, 1 in 20	½ to 1 oz.	
,, Simarubæ	1 ounce	537

NAME.	DOSE.	PAGE
Infusum Tinosporæ	½ to 1 oz.	xxiii
,, *Toddaliæ*	1 to 2 oz.	xxiii
,, *Uvæ Ursi*, 1 in 20	½ to 1 oz.	528
,, Valerianæ, 1 in 40	1 to 2 oz.	
,, Vincæ Majoris	a wine-glassful	539
Ingluvin	5 to 10 gr.	401
Inhalant, Formaldehyde		67
Inhaler for Formalin		67
,, Nasal Ozonic		348
,, Ozonic		348
Injectio Acidi Lactici (Laryngeal), C.L.T.E.		22
,, ,, Osmici Hypodermica, 1 per cent.		24
,, ,, Salicylici		33
,, ,, Sclerotici Hypodermica	3 to 5 m.	244
,, Aconitinæ Hypodermica	1 to 2 m.	49
,, Antipyrin Hypodermica	8 to 30 m.	191
,, ,, et Cocainæ Hypodermica	8 to 30 m.	191
,, *Apomorphinæ Hypodermica*	5 to 10 m.	85
,, Arsenii Iodide Hypodermica	6 m.	97
,, Atropinæ Hypodermica	1 to 4 m.	105
,, Caffeinæ Hypodermica	1 to 6 m.	135
,, *Cocainæ Hypodermica*	2 to 5 m.	203
,, Codeinæ Hypodermica	2 to 12 m.	215
,, Coninæ Hydrobromidi Hypodermica	1 to 3 m.	220
,, Cotoin Hypodermica	15 m.	223
,, Creasoti (Laryngeal), C.L.T.E.		224
,, ,, Compound		224
,, Curare Hypodermica	1 to 6 m.	233
,, *Ergotæ Hypodermica*	3 to 10 m.	242
,, Ergotininæ Hypodermica	3 to 10 m.	243
,, Exalgin Hypodermica		186
,, Guaiacol		228
,, Homatropinæ Hypodermica	1 to 6 m.	109
,, Hydrargyri Hypodermica		283
,, ,, Iodidi Rubri Hypodermica	2 to 6 m.	286
,, Hydrargyri Oxidi Flavi		294
,, ,, ,, ,, cum Asparagin		295
,, ,, ,, ,, cum Formamido		295
,, ,, Succinimidi		294
,, ,, Thymolacetatis		295
,, Hyoscinæ Hypodermica	1 to 2 m.	303
,, Hyoscyaminæ Hypodermica	1 to 2 m.	306
,, Iodi Hypodermica Fortissima	3 to 5 m.	319
,, Iodi, C.L.T.E. (Morton's Fluid)		319
,, Iodoformi		312

NAME.	DOSE.	PAGE
Injectio Lecithin	1 Cc.	339
,, Menthol, C.L.T.E. (for the middle ear)		349
,, Morphinæ Acetatis Hypodermica	1 to 2 m.	353
,, ,, et Atropinæ Hypodermica	1 to 3 m.	353
,, *Morphinæ Hypodermica*	2 to 5 m.	356
,, Nitroglycerini Hypodermica	1 to 4 m.	365
,, Physostigminæ Sulphatis Hypodermica	1 to 4 m.	411
,, Picrotoxini Hypodermica	3 to 6 m.	413
,, Pilocarpinæ Nitratis Hypodermica	2 to 6 m.	330
,, Potassii Cantharidatis	1-400 to 1-200 gr.	150
,, Pyoktanin		195
,, Quininæ Hydrobromidi Acid Hypodermica	3 to 12 m.	436
,, Quininæ Hydrochloridi Hypodermica		437
,, (aural)		437
,, Quininæ Hydrochloridi Acidi Hypodermica	3 to 12 m.	437
,, Quininæ Hydrochlorosulphatis Hypodermica	2 to 12 m.	438
,, Sal-Alembroth Hypodermica		292
,, Sodii Arsenatis et Ferri	5 to 10 m.	98
,, Sodii Cacodylatis	17 m. (1 Cc.)	100
,, (Hypodermic, Intravenous and Rectal)		
,, Sodii Cinnamatis 10 per cent. sol.	30 to 60 m.	3
,, Sodii Salicylatis	15 to 30 m.	36
,, Sparteinæ Hypodermica	2 to 6 m.	486
,, Strychninæ Hydrochloridi	2 to 6 m.	494
,, ,, Nitratis Hypodermica	2 to 6 m.	494
,, Suprarenal	1 to 5 m.	572
,, Tuberculin (Koch) R. or TR.		560
,, ,, Old (Koch's original)		558
,, Zinci Chloridi		522
Ink, Heberden's	1 to 2 oz.	175
Insufflatio Eucalypti Gummi		249
,, Iodoformi		312
,, ,, Composita		312
,, ,, et Morphinæ		312
,, Morphinæ		354
Intracerebral Injection of Antitetanic Serum		557
Intra-spinal Anæsthesia by Tropacocaine		210
Intravenous Injection of Saline Solution		474
Inula Helenium		533
Invert Sugar		467
Iodalbacid	15 gr.	323
Iodantipyrin, *syn.* Iodopyrin	5 to 20 gr.	193

Name.	Dose.	Page
Iod-eosin		49
Iodine		318
Iodinoleum, Iodinol	2 to 3 gm.	319
Iodipin	2 to 3 gm.	319
Iodised Serum, De Renzi's, Intravenous		475
Iodised Solution, Carbolised		12
,, Starch	½ to 4 dr.	322
,, ,, Paste of		323
,, Phenol		13
Iodo-Caffeine	2 to 10 gr.	136
Iodo-Cresol, *syn.* Traumatol		318
Iodoform	½ to 3 gr.	310
,, and Eucalyptus Bougies		312
,, Pencils		313
,, Varnish (Whitehead's)		313
,, Vaseline 10 per cent.		313
Iodoformal		316
Iodoformin		316
Iodoformogen		316
Iodoformum	½ to 3 gr.	310
,, Aromaticum		311
,, Præcipitatum	½ to 3 gr.	311
Iodo-Glycerin Solution, 10 gr. in 1 oz.		319
Iodol	1 to 3 gr.	316
Iodo-menthol		316
Iodo-Mercurate of Potassium, Solution of		610
Iodopyrin	5 to 20 gr.	193
Iodo-Tannin (Syrup of)		321
,, -Theobromine	2 to 10 gr.	504
Iodothyrin		575
Iodo-Vaseline		313
Iodum		318
,, Oleatum, 10 per cent.		320
Ipecacuanha	¼ to 2 gr. expectorant 15 to 30 gr emetic	324
,, sine Emetina	5 to 20 gr.	325
Ipomœa Turpethum		xxiii
Iridin, *syn.* Irisin	1 to 3 gr.	327
Iron Alum	3 to 10 gr.	266
,, Dialysed	10 to 30 m.	259
,, Somatose	75 to 150 gr.	253
Isarol		310
Isatropyl-Cocaine		199
Iso-nitroso-antipyrin		54, 191
Iso-pilocarpine		330

NAME.	DOSE.	PAGE.
Isoaconitine		47
Isobutyl Nitrite	2 to 5 m. inhaled	82
„ „ Capsules of		82
Ispaghula	50 to 150 gr.	xxi
Itrol (Argenti Citras)		87
Izal, Medical		179
„ Fluid		179
Jaborandi	5 to 60 gr.	328
Jaborine		330
Jaffe's Indican Test		607
Jalapa	5 to 20 gr.	332
Jalapæ Resina	2 to 5 gr.	332
Jalapin	1 to 5 gr.	333
Jalapurgin	1 to 5 gr.	333
Jamaica Dogwood		423
Jambul	5 to 30 gr.	333
James's Powder = Pulvis Antimonialis		
Jamun, *syn.* Jambul		333
Japaconitine		48
Japanese Aconite		526
„ Belladonna		537
„ Isinglass		527
Jarisch's Ointment		30
Jasmine, Yellow		26
Jenner's Blood Stain		60
Jephson's Powder	60 gr.	49
Jequiritol, Serum, Jequirity Seed		1
Jervine		51
Jez's Antityphoid Extract		56
Johnson's Glucose Test		6
„ Picro-Saccharimeter		606
Juglandin	2 to 5 gr.	53
Jujubes—*see* Trochisci "G"		
Jumble Beads		1
Juniper Tar		42
Kaladana		xx
Kaladanæ Resina	2 to 8 gr.	xx
Kalodont		47
Kamala	30 to 120 gr.	26
Kaolin		33
Kavæ Rhizoma		xxi, 53
Kelene		5
Kelvoline		17
Keratin Coating for Pills		41
Kernel Oil		7
Kerosene		39

NAME.	DOSE.	PAGE
Kieselguhr		335
Kino	5 to 20 gr.	336
,, *Eucalypti*	5 to 20 gr. xxi,	249
,, Gelatinisation of Tincture		336
Kineurine	3 to 8 gr.	26
Kiryat, *syn.* Creyat	xviii,	532
Kleinenberg's Hæmatocylin		602
Koch's Tuberculin		558 *et seq.*
Kola Nut		133
Kolanin	2 to 5 gr.	133
Koromiko		533
Kousso	¼ to ½ oz.	267
Krameria		336
Kreatinin		602
Kreat, Kreat Halviva	5 to 30 m.	532
Kreosote	1 to 5 increased to 30 m.	224
Kresolum		11
Krystall Violet		622
Kryofin	3 to 8 gr.	187
Kryogenin	3 to 24 gr.	187
Kugloids		26
Kühne's Carbol-Methylene Blue		619
Kunsite		452
Lachnanthes Tinctoria		533
Lac Sulphuris	20 to 60 gr.	498
Lactic Acid	5 to 20 m.	21
,, ,, Diluted	30 to 120 m.	21
,, ,, Injection		22
Lactophenin	5 to 15 gr.	187
Lacto-Somatose		253
Lact s[illegible]		533
Lactosulpur Bossé		499
Lactuca Virosa		305
Lactylphenetidin	5 to 15 gr.	187
Ladies' Slipper		531
Lævulose		467
Lamellæ Atropinæ	1-5000, 1-2000, 1-500 and 1-250 gr.	104
,, ,, 1-200 gr. and Cocainæ 1-100		105
,, *Cocainæ*	1-50 gr.	203
,, Euphthalminæ	1-50 gr. and 1-100 gr.	111
,, *Homatropinæ*	1-100 gr.	109
,, ,, 1-50 gr. and Cocainæ 1-50 gr.		109
,, *Physostigminæ*	1-1000 gr.	412
,, *vide* also Ophthalmic Discs.		
Lanæ Adeps		337
Lanolimentum Boroglycerini		6

NAME.	DOSE.	PAGE
Lanolin, *syn. Adeps Lanæ Hydrosus*		337
,, Anhydrous, *syn. Adeps Lanæ*		337
,, Cream		338
,, Ointment		338
Lanolinum Hydrargyri		337
Lapis Calaminaris Præparatus		335
,, Divinus		75
Larch Agaric	10 to 30 gr.	527
Largin		92
Lassar's Pastes		425, 463, 524
,, Ung. Diachyli Carbolisatum		375
Laudanum	20 to 30 m.	386
Laurocerasi folia		79
Laxol		380
Lecithin	3 to 5 gr.	338
Legal's Reaction for Acetone		593
Leishman's Stain		600
Lemco		251
Lenigallol		30
Lenirobin		171
Lenitive Electuary		471
Leptandrin	¼ to 2 gr.	533
Leucin		597
Levigations		512
Levulose		467
Levuretine	one teaspoonful	156
Levurine	,, ,,	156
Lieben's Reaction for Acetone		593
Liebig's Extract of Beef		251
Liebreich's Pepsin-Essenz	1 to 2 dr.	399
Light Treatment		448
,, ,, Red		449
,, ,, Violet		449
Ligroin		396
Lily of the Valley		221
Limonis Cortex Siccatus		xxiv
Linctus, 'Bart's,'	1 dr.	385
,, Camphoræ Compositus	1 dr.	385
,, Codeinæ	1 to 2 dr.	215
,, Ipecacuanhæ	1 dr.	325
,, Morphinæ	60 m.	354
,, Opiatus	1 dr.	384
,, Pini Terpin et Heroin	1 dr.	418
,, Scillæ Opiatus	1 dr.	385
,, Sedativus	1 dr.	355
,, St. Thos.	1 dr.	384

Name.	Dose.	Page
Linctus Tolu cum Opio	1 dr.	385
Liniment, A. B. C.		50
Linimentum Aconiti		50
,, ,, Compositum		50
,, *Ammoniæ*		78
,, Atropinæ, 1 in 100		106
,, ,, et Chloroformi		106
,, *Belladonnæ*		118
,, Belladonnæ Compositum		118
,, Calaminæ		335
,, *Calcis*		139
,, *Camphoræ*		142
,, ,, *Ammoniatum*		142
,, Cantharidis Compositum		149
,, Capsici		151
,, ,, Compositum		151
,, ,, Duplex		151
,, *Chloroformi*, 1 in 2		168
,, Crinale		148
,, Exsiccans		509
,, *Hydrargyri*		283
,, ,, Oleatis c. Morphina		373
,, Iodi, syn. *Liquor Iodi Fortis*		320
,, Menthol		349
,, *Opii*		385
,, ,, Ammoniatum		385
,, Picis		425
,, *Potassii Iodidi cum Sapone*, 1 in 10 approx.		
,, St. John Long's		417
,, Scopolæ		536
,, *Sinapis*		473
,, *Terebinthinæ*		417
,, ,, *Aceticum*		417
Lipanin		379
Liquid Glycerin Soap		470
,, Somatose		253
Liquor Acidi Chromici, 1 to 3		18
,, ,, Chromo-Aceto-Osmici		24
,, ,, Osmici, 1 per cent.	2 to 10 m.	24
,, ,, Picrici	½ to 3 dr.	29
,, ,, Salicylici		34
,, Acidus Halleri	2 to 8 m.	43
,, Aluminii Acetici		74
,, ,, Chloridi		75
,, *Ammoniæ*	10 to 20 m.	78
,, ,, Domesticus		78

NAME.	DOSE.	PAGE.
Liquor Ammoniæ Fortis	3 to 6 m.	78
,, ,, Fortissimus		78
,, *Ammonii Acetatis*	2 to 6 dr.	78
,, ,, Acetatis Fortior	25 to 75 m.	78
,, ,, *Citratis*	2 to 6 dr.	79
,, ,, Citratis Fortior	½ to 1½ dr.	79
,, *Andrographidis Concentratus*	½ to 1 dr.	xviii
,, Antimonii Chloridi		83
,, *Aristolochiæ Concentratus*	½ to 2 dr.	xix
,, *Arsenicalis*	2 to 8 m.	94
,, Arsenici Bromatus	1 to 5 m.	95
,, ,, Cinnamylicus cum Opio		95
,, ,, *Hydrochloricus*	2 to 8 m.	95
,, *Arsenii et Hydrargyri Iodidi*	5 to 20 m.	97
,, Atropinæ Salicylatis		104
,, ,, *Sulphatis*, 1 per cent.	½ to 1 m.	105
,, Auri et Arsenii Bromidi	5 to 10 m.	113
,, ,, et Hydrargyri Bromidi	5 to 10 m.	113
,, *Berberidis Concentratus*	½ to 1 dr.	xix
,, *Bismuthi*		120
,, ,, *et Ammonii Citratis*	30 to 60 m.	120
,, ,, Concentratus	15 to 30 m.	121
,, Bromi		480
,, Bromi Arsenitis (Clemens)	1 to 5 m.	95
,, Bromo-Chloral Compositus	½ to 2 dr.	159
,, Brucinæ	10 m.	529
,, Calcii Chloridi	15 to 50 m.	138
,, *Calcis*	1 to 4 oz.	
,, ,, *Saccharatus*	20 to 60 m.	139
,, *Calumbæ Concentratus*, 1 in 2	½ to 1 dr.	339
,, *Caoutchouc*		473
,, Capsici Compositus		151
,, Carbonis Detergens		178
,, Carmini, 40 gr. to 1 oz.		152
,, Carnis	2 to 4 dr.	252
,, *Chiratæ Concentratus*, 1 in 2	½ to 1 dr.	339
,, *Chlori*	10 to 20 m.	
,, Chloromorphiæ	5 to 15 m.	168
,, Cinnamylicus, Hoff.		95
,, Cocci		152
,, Cocainæ Hydrochloratis (Injectio)	2 to 5 m.	203
,, Copaibæ	½ to 1 dr.	382
,, ,, cum Buchu et Cubeba	1 to 2 dr.	382
,, *Coscinii Concentratus*	½ to 1 dr.	xx
,, Cresoli Saponatus		180
,, *Cuspariæ Concentratus*, 1 in 2	½ to 1 dr.	339

NAME.	DOSE.	PAGE
Liquor Delphinine Compound	...	235
,, *Epispasticus*	...	149
,, ,, *Mylabridis*	...	xxi
,, Ergotæ Aceticus	10 to 60 m.	243
,, ,, Ammoniatus	10 to 60 m.	243
,, *Ethyl Nitritis*	.. 20 to 60 m.	54
,, *Ferri Acetatis*	... 5 to 15 m.	262
,, ,, Albuminati	... 1 to 4 dr.	261
,, ,, Chloroxidi	... 10 to 30 m.	259
,, ,, Dialysatus	10 to 30 m.	259
,, ,, Hypophosphitis Compositus	... ½ to 2 dr.	407
,, ,, ,, Fortis	... 10 to 30 m.	407
,, ,, Iodidi	... 3 to 6 m.	263
,, ,, Oxychlorati	... ...	259
,, ,, Oxydati Saccharati	... ½ oz.	260
,, ,, Peptonati...	... 1 to 4 dr.	261
,, ,, ,, cum Quinina...	... 1 to 4 dr.	262
,, ,, *Perchloridi*	5 to 15 m.	257
,, ,, ,, *Fortis* ...	... 1 to 4 m.	257
,, ,, *Pernitratis*	... 5 to 15 m.	
,, ,, Subsulphatis	... 3 to 6 m.	266
,, Ferro-Manganesii Peptonati	... 1 to 4 dr.	262
,, Fluoresceinæ	... ...	186
,, Glonoini	... ½ to 2 m.	366
,, Gutta Percha, B P. 1885 ...	1 in 8 approx.	171
,, *Hamamelidis*	... ...	282
,, *Hydrargyri Nitratis Acidus* ...	... ...	288
,, ,, *Perchloridi* ...	½ to 1 dr.	289
,, *Hydrogenii Peroxidi*	... ½ to 2 dr.	298
,, Hyoscinæ Hydrobromidi ...	... 3 to 15 m.	303
,, Hypophosphitum Compositus	... ½ to 2 dr.	407
,, Iodi	... 5 to 30 m.	320
,, ,, Dilutus	... ...	320
,, ,, *Fortis*	... ...	320
,, Jaborandi (Ext. Fluid) ...	.. 5 to 15 m.	329
,, *Krameriæ Concentratus*, 1 in 2	... ½ to 1 dr.	339
,, Magnesii Boratis	... ...	9
,, ,, *Carbonatis*	... 1 to 2 oz.	
,, *Morphinæ Acetatis*, 1 per cent.	10 to 60 m.	354
,, ,, Bimeconatis ,,	5 to 40 m.	355
,, ,, *Hydrochloridi* ,,	10 to 60 m.	355, 386
,, ,, Sulphatis ,,	10 to 60 m.	356
,, ,, *Tartratis*	10 to 60 m.	357
,, *Nitroglycerini*	½ to 2 m.	366
,, Nuclei	... ... 2 dr.	157
,, Opii Sedativus	. 5 to 20 m.	381

NAME.	DOSE.	PAGE
Liquor Pancreaticus	1 to 2 dr.	388
,, *Pancreatis*	1 to 2 dr.	388
,, Pepticus	1 to 2 dr.	399
,, *Picis Carbonis*		178
,, ,, ,, et Ligni		178
,, ,, Ligni		178
,, Picrotoxini Aceticus	2 to 12 m.	413
,, Plumbi Lactatis		274
,, ,, *Subacetatis Dilutus Fortis*		273
,, *Potassæ*, 27 gr. in 1 oz.	10 to 30 m.	
,, Potassæ Arsenitis	2 to 8 m.	94
,, *Potassii Permanganatis*	2 to 4 dr.	346
,, Pro Syrupo Eastonii		264
,, Protargol		91
,, *Quassiæ Concentratus*, 1 in 10	½ to 1 dr.	339
,, Quininæ et Strychninæ	4 to 8 m.	264
,, *Rhei Concentratus*, 1 in 2	½ to 1 dr.	339
,, Santali cum Buchu et Cubeba	1 to 2 dr.	383
,, ,, Compositus	1 to 2 dr.	383
,, ,, cum Kava	1 to 2 dr.	383
,, *Sarsæ Compositus Concentratus*	2 to 8 dr.	339
,, *Senegæ Concentratus*, 1 in 2	½ to 1 dr.	339
,, *Sennæ Concentratus*, 1 in 1	½ to 1 dr.	339
,, *Serpentariæ Concentratus*, 1 in 2	½ to 1 dr.	339
,, *Sodæ Chlorinatæ*, 2·5 per cent Free Chlorine	10 to 20 m.	
,, *Sodii Arsenatis*	2 to 8 m.	98
,, ,, Carbolatis		15
,, ,, *Ethylatis*		479
,, ,, Hypobromitis		479
,, Stillingiæ Compositus	1 to 4 dr.	488
,, *Strychninæ Hydrochloridi*	2 to 8 m.	494
,, Testicularis	15 to 30 m.	569
,, Thymol, 1 in 800		505
,, *Thyroidei*	5 to 15 m.	575
,, *Tinosporæ Concentratus*	½ to 1 dr.	xxiii
,, *Toddaliæ Concentratus*	½ to 1 dr.	xxiii
,, *Trinitrini*	½ to 2 m.	366
,, *Zinci Chloridi*, 4 m. = 3 gr.		521
Liquores Concentrati		339
Liquorice		277
,, *Compound Powder of*	60 to 120 gr.	278
,, Indian		1
Listerine	1 to 2 dr.	6
Lithii Benzoas	2 to 10 gr.	340
,, Bromidum	5 to 15 gr.	126, 340

Name	Dose.	Page
Lithii Carbonas	2 to 5 gr.	340
,, *Citras*	5 to 10 gr.	340
,, ,, *Effervescens*	1 to 2 dr.	340
,, Glycerophosphas	3 to 10 gr.	26
,, Guaiacas	2 to 5 gr.	340
,, Hippuras	5 to 20 gr.	340
,, Persulphas		482
,, Salicylas	5 to 20 gr.	340
,, ,, Effervescens	1 to 2 dr.	341
,, Sulpho-Ichthyolas	10 to 30 gr. daily	307
,, Tartras Acidus	5 to 20 gr.	341
Lithion	½ to 1 teaspoonful	341
Lithium		340
,, -Diuretin	5 to 15 gr.	505
,, Quinate	5 to 15 gr.	435
,, Salicylicum	5 to 20 gr.	340
Litmus Paper		613
,, Broth		625
Livingstone Rousers		442
Lœffler's Alkaline Methylene Blue Solution		619
,, Neisser Stain		618
,, Pigment for Diphtheria		258
Lofotol		378
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London Paste		479
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,, ,, Carbolici		12
,, ,, Picrici, 1 per cent.		29
,, Ammonii Chloridi		76
,, Calaminæ		335
,, Calcii Sulphurati		140
,, Creolin		179
,, Hamamelidis		282
,, Hydrargyri Acetica		290
,, ,, *Flava*		289
,, ,, *Nigra*		293
,, ,, Perchloridi		289
,, Paraffini Composita		397
,, Picis Carbonis Alkalina		178
,, Pilocarpinæ (for the hair)		331
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,, Rubra		525
,, Sulphatum		525
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Lugol's Solution = Liq. Iodi, P.B. 85	5 to 10 m.	320
Lunar Caustic		88
,, *Mitigated*		88
,, *Toughened*		89
Lund's Oil ..		12
Lupulin	2 to 5 gr.	341
Lupulus		341
Lustig's Antiplague Vaccine		548
,, ,, Serum		549
Lycaconitine		526
Lycetol	4 to 10 gr.	420
Lycoperdon Giganteum		533
Lycopodium		342
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Lysidine	of sol. 10 to 30 m.	420
,, Bitartrate	5 to 15 gr.	421
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,, Dusting Powder		69
,, Mouth Wash		69
,, Pessaries		69
,, Tooth Paste		69
,, Tooth Powder		69
,, Toilet Soap		69
Lysol		180
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MacDade's Succus	1 to 4 r.	488
Mackey's Terpinol Fluid		501
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Madar, Mudar		xix
Magendie's Solution of Morphine, 16 gr. in 1 oz.		353
Magenta	½ to 4 gr.	186
Magnesia Levis	30 to 60 gr., or 5 to 30 gr. repeated	342
,, *Pond.*	30 to 60 gr., or 5 to 30 gr. repeated	342
Magnesii Boras		9
,, Borocitras	15 to 30 gr.	9
,, Bromidum	10 to 20 gr.	126
,, Cacodylas	¾ gr.	99
,, *Carb. Levis*	30 to 60, or 5 to 30 gr. repeated	342
,, *Carb. Pond.*	30 to 60, or 5 to 30 gr. repeated	342
,, Glycerophosphas	3 to 10 gr.	26
,, Peroxidum		300
,, Ricinoleas		380

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Magnesii Sulphas	¼ to ½ oz , or 30 to 120 gr. repeated	342
,, *Effervescens*	½ to 1 oz., or 60 to 240 gr. repeated	342
,, Sulphis	10 to 30 gr.	45
Magnesium		342
,, Platino-cyanide		452
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,, Ustilago		534
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,, ,, Capsules	1 to 4	267
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Malti Pulvis	1 to 2 dr.	343
Maltine and Preparations	1 to 4 dr.	344
Malto-Yerbine	1 to 4 dr.	539
Maltolivine	2 to 4 dr.	379
Maltose Agar		626
Maltum	1 to 2 dr.	343
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Mandl's Pigment		321
Manganesii Bromidum	1 to 3 gr.	126
,, Citras, soluble	3 to 5 gr.	345
,, Ferro Citrate	3 to 10 gr.	345
,, ,, ,, with Quinine	3 to 5 gr.	345
,, ,, ,, with Strychnine	1 gr.	345
,, ,, Phosphate	3 to 10 gr.	345
,, Glycerophosphas	1 to 5 gr.	26
,, Hypophosphis	1 to 10 gr.	345
,, Oxidum Præcipitatum	3 to 10 gr.	345
,, Phosphas	1 to 5 gr.	345
,, Sulphas	2 to 10 gr. or more	345
Manganesium		345
Manna	1 dr. to 1 oz.	
Mannitol Nitrate, Hexanitrate	1 gr.	245
,, ,, Tablets		245
Margosa Bark		xix
Marienbad Salt		484
Marigold		141
Marking Nut		528
Marmite		158
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,, Carmalum		601
,, Hæmalum		601
,, ,, Acid		602
,, Hæmatoxylin		602
,, Paracarmine		602
,, Picrocarmine		602
,, Reagent		237
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,, ,, Sphagnum		487
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,, ,, Camphora		348
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,, Snuff		349
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Mercur-β-Naphthol Acetate	½ to 1 gr.	295
Mercuric Benzoate		284
,, Ethylene-diamine Sulphate		283
,, Iodide Oil		266
,, Oleate		373
,, Stearate		372
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Mercurol		157
Mercuro-Zinc Cyanide		285
,, ,, ,, Cream		285
,, ,, ,, Paste		285
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,, -benzamine-semi-carbazide	3 to 24 grs.	187
Metadihydroxybenzene	3 to 8 gr.	462
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Metaldehyde	2 to 8 gr.	64
Metaphenylene diamine		610
Meta-phosphoric Acid, as test		595
,, -tri-iodo-cresol		317
Methacetin	2 to 6 gr.	185
Methane		611
Methyl-acetanilide	½ to 2 gr.	185
,, Benzene		184
,, benzoyl aconine		43
,, ,, ecgonine		198
,, Chloridum		57, 350
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Methylene		350
,, Bichloride		350
,, Blue (Loeffler's Stain, 619)	1 to 4 gr.	187
,, ,, Carbolised, Kühne		619
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,, Citric Acid		67
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Methyl-propyl-phenol Hexahydride		347
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,, ,, Plaster		34
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Michel's Paste		44
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Microscopic Glycerin Jelly		273
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Migranin	8 to 15 gr.	136
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,, for Bacterial Culture		626
,, Pasteurised		390
,, Peptonised		388
,, Somatose		253
,, Sugar		533
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Mistletoe	10 to 60 gr.	477, 539
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,, Alba	½ to 2 ounces	343
,, Aloes	1 to 4 dr.	73
,, *Ammoniaci*, with Syrup of Tolu, 1 in 16	½ to 1 oz.	
,, Ammonia cum Aethere	1 oz	53
,, *Amygdalæ*	½ to 1 oz.	
,, Amyl Nitritis	1 to 2 dr.	80
,, Anti-choleraica	1 oz.	123
,, Antiseptica U.C.H.	for 1 year old, 1 dr.	380
,, Apomorphinæ et Terebeni	1 oz.	85
,, Atropinæ et Strychninæ	1 dr.	106
,, Bismuthi	1 oz.	120
,, ,, Composita	20 to 30 m.	121
,, ,, ,, cum Pepsina		121
,, Brominol	½ oz.	128
,, Bromoformi	2 to 4 dr.	129
,, Butyl-Chloral	1 oz.	130
,, Cascaræ Gt. O m. H.		154
,, Chlori cum Quinina	1 oz.	441
,, Copaibæ	½ to 1 oz.	382
,, *Creosoti*	½ to 1 oz.	225
,, *Cretæ*	½ to 1 oz.	139
,, Diarrhœica	1 oz.	123
,, Exalgin	2 to 4 dr.	185
,, Ferri Amara	1 oz.	259
,, ,, Aperiens	1 oz.	259
,, ,, Aromatica	1 to 2 oz.	175
,, ,, Arsenicalis	½ to 1 oz.	259
,, ,, *Composita*	½ to 1 oz.	257
,, ,, Perchloridi	1 oz.	259
,, ,, Salina	1 oz.	259
,, Filicis	1 oz.	267
,, Gentianæ Composita, P.L.	½ to 2 oz.	
Inf. Gent. Co., 12 oz. Inf. Sennæ Co., 6 oz. Tr. Card. Co., 2 oz.		
,, Grindeliæ	1 oz.	279
,, *Guaiaci*	½ to 1 oz.	
,, Guaiacol		228
,, Hydrargyri Biniodidi K. C. H.		287
,, Hydrastis et Ergot	1 oz.	296
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NAME.	DOSE.	PAGE
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,, Mucilaginosa		86
,, Olei Olivæ		379
,, ,, *Ricini*	1 to 2 oz.	379
,, ,, Santali	1 oz.	382
,, Oleo-balsamica	1 to 4 dr.	505
,, Paraldehyde	1 to 2 oz.	64
,, Rosæ Laxativa, G. H.	1 oz.	381
,, Scammonii (3 gr. in Milk 1 oz.)	1 to 3 oz.	
,, *Sennæ Composita*	1 to 2 oz.	471
,, *Spiritus Vini Gallici*	1 to 2 oz.	
,, Terebinthinæ Chiæ	1 to 3 dr.	502
Mitigated Caustic		89
Mixtura Sulphurica Acida		43
Moebius's Anti-Thyroid Serum		576
Molasses, Queensland		467
Mollinum		351
,, Hydrargyri		351
,, Potassii Iodidi		351
Molybdates		44
Molybdate Test for Alkaloids		44
Momordicin	1-40 to 1-10 gr.	239
Monobromacetanilide	3 to 15 gr.	181
Monobromated Camphor	2 to 10 gr.	144
Monobromphenylacetamide	3 to 15 gr.	181
Monochloralantipyrine	15 gr.	192
Monochlorphenol		17
Mono-Methyl-Xanthine		503
Monophenylamine		182
Mono-Salicyl Glycerin-ester	45 to 90 gr.	38
Monsel's Salt		266
,, Solution	3 to 6 m.	266
Monsonia Ovata		534
Morphina, Morphine	1-10 to ⅓ gr.	351
Morphinated Water		352
Morphinæ Acetas	1-8 to ½ gr.	352
,, -Benzoyl-Diacetyl-Ethyl H. Cl.	$\frac{1}{12}$ to $\frac{1}{6}$ gr.	357
,, Hydrobromidum	1-8 to ½ gr.	354
,, *Hydrochloridum*	1-8 to ½ gr.	354
,, Meconas	1-8 to ½ gr.	355
,, Oleatum, 1 to 60		352
,, Sulphas	1-8 to ½ gr.	356
,, *Tartras*	1-8 to ½ gr.	356
Morphine Habit		352
,, Scopolamine Anæsthesia		303
Morrhuæ Oleum	1 to 4 dr.	377

NAME.	DOSE.	PAGE
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Moschus	5 to 10 gr.	531
Moss, Felt		487
,, Gauze Covered		487
,, Hygienic Towels		487
,, Loose		487
,, Soles		487
,, Turf		486
Mountain Ash		537
,, Damson		537
Mouth Washes, Antiseptic		40
,, ,, Lysoform		69
Mucilago Acaciæ, 2 fl. oz.=1 oz. rinsed gum	*ad lib.*	508
,, Amyli, 12 gr. to 1 oz.		
,, *Gummi Indici*		xx
,, *Tragacanthæ*	1 dr. to 1 oz.	509
,, Ulmi		538
Mucuna Pruriens	1 or 2 gr.	267
Mucin	5 to 10 gr.	567
Mudar		xix
Mullein, Great		519
Müller's Fluid		428
Murexide Reaction		608
Musk		534
Mustard		472
Muthu's Formaldehyde Inhalant		67
Mutton Essence		251
,, Peptones		252
Myelocene	10 drops or more	566
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Myelin		566
Mylabris Phalerata		xxi, 148
Mynsicht's Elixir of Vitriol	3 to 10 m.	43
Myoctonine		526
Myrobalanum	½ to 1 dr.	xxi
Myrobalanus Emblica	1 or 2	241
Myrica Gale		529
Myricin	2 to 5 gr.	531
Myrrh	10 to 20 gr.	
Myrtol	5 to 15 m.	534
Myrtus Chekan		530
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Naphthalene, *syn.* Naphthalin,	2 to 15 gr.	362
,, Tetrachloride	3 to 12 gr.	362

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Naphthol α-		359
,, β-	3 to 10 gr.	358
,, Benzoate		360
,, Bismuth	10 to 30 gr.	125
,, Camphor		361
,, Mercury	¾ gr.	295
Narceina	1-8 to 1 gr.	362
Narcotile		58
Narcotina	1 to 3 gr.	363
Nargol		157
Nasal Douches—Collunaria		
,, Ozonic Inhaler		348
Natrium Sulphuricum Siccum	½ to 2 dr.	483
Nebulæ		364
Nebula Acid Boric, 1 dr. Glyc. Boric Acid to oz. ...		
,, Acidi Lactici, 1 in 16		22
,, Acid Tannic T.H., Glyc. Acid Tannic, 40 m. to oz. Aq.		
,, Alkalina		477
,, Aluminis T.H., 5 to 15 gr. to oz. Aq.		
,, Cocainæ Aquosa		203
,, ,, Oleosa...		200
,, Cupri Sulph., 5 or 10 gr. to oz. Aq.		
,, Eucaini Hydrochloridi		211
,, Eucalypti T.H., 20 m. Oil with Paraff. Liq. to 1 oz.		
,, Extracti Supra-renal		571
,, Ferri Perchloridi, 3 gr. in 1 oz.		258
,, Iodoformi, 40 gr. to oz. Ether		
,, Menthol, 5 to 10 gr. to oz. oil		349
,, Potassii Permanganatis		347
,, Sodii Bicarbonatis		477
,, ,, Salicylatis, 20 gr. to oz. Aq., C.L.T.E. ...		
,, Zinci Chloridi, 10 to 25 gr. in oz. Aq.		
,, ,, Sulphatis, 10 to 20 gr. to oz. Aq.		
,, ,, Sulphocarbolatis, 5 gr. to oz. Aq.		
Nectandra Rodiæi		529
Nectria ditissima		535
Nectrianin		535
Neelsen's Solution		619
Neem, Nim		xix
Neisser's Stain		617
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Nepaul Aconite		526
Nepenthe=strength of Tr. Opii	5 to 30 m.	
Nessler's Solution for Ammonia		610

NAME.	DOSE.	PAGE
Neuralgic Pills		131
Neurodin	5 to 15 gr.	189
Neutralisation Table		640
'New' Cacodyle		101
Nickel Carbonyl		613
Nicotina	1-6 to 1 gr.	364
Nicotinæ Salicylas		364
Nilicamam		241
Nirvanin		212
Nitrated Papers		428
Nitric Acid Albumin Test		595
,, ,, Bile Test		596
Nitrite of Ethyl		54
,, *Amyl*	½ to 1 m. by mouth 2 to 5 m. inhaled	80
,, Isobutyl	2 to 5 m. inhaled	82
Nitrobenzene		80
Nitro-erythrite	½ to 1 gr.	244
Nitroglycerin	1-200 to 1-50 gr. or more	365
,, *Solution*	½ to 2 m. or more	366
,, *Tablets*	1-200, 1-100, 1-50 & 1-25 gr. in each	366
Nitrometer, Allen's		80
Nitro-mannite	1 gr.	245
,, -propiol, Test for Sugar in Urine		605
Nitroso-Nitrate of Mercury		595
Nitrous Ether		53, 65
,, Oxide		77
,, ,, with Ethyl Chloride		57
Non-Alcoholic Tinctures		508
Nordhausen Sulphuric Acid		44
Normal Saline Solution		474
Nosophen	3 to 8 gr.	317
Nuclein		157
Nucleinate of Iron		157
Nucleol		157
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,, Powder, Brand's		253
Nux Vomica	1 to 4 gr.	369
Nylander's Reagent		606
Odol		40
Oil, Camphor		142
,, of Cade		424
,, Sterilised		280
,, Vaseline		395
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,, of Mirbane		80

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Oleata		371
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,, *Mercury*		373
,, ,, and Morphine		373
,, *Zinc*		375
Oleatum Aconitinæ, 1 gr. in 50 m.		49
,, Atropinæ, 1 to 40		106
,, *Hydrargyri*, 5, 10, and 20 per cent.		373
,, ,, cum Morphina		373
,, Iodi		320
,, Morphinæ, 1 gr. in 60 m.		352
,, Quininæ, 1 in 4		371
,, Veratrinæ, 1 in 50		519
,, *Zinci*		375
Olefiant Gas		611
Oleo-creosote	10 to 30 m.	227
,, -resina Capsici		150
,, -resina Cubebæ	5 to 30 m.	232
Oleum Æthereum, Oil of Wine		53
,, Amygdalæ		79
,, ,, Essentiale		79
,, ,, ,, sine Acid. Hydrocyanic		79
,, ,, Persicæ		79
,, ,, Sterilisatum		80
,, Asepticum		80
,, *Ajowan*	½ to 3 m.	xxii, 505
,, *Anethi*	½ to 3 m.	
,, *Anisi*	½ to 3 m.	
,, *Anthemidis*	½ to 3 m.	
,, *Arachis*		xxii
,, Atropinæ		106
,, Betulæ Pyroligneum		424, 425
,, *Cadinum*		424
,, *Cajuputi*	½ to 3 m.	
,, Camphoratum		143
,, ,, Forte		143
,, *Carui*	½ to 3 m.	
,, *Caryophylli*	½ to 3 m.	
,, Chloroformii		168
,, *Cinnamomi*	½ to 3 m.	
,, *Copaibæ*	5 to 20 m.	
,, *Coriandri*	½ to 3 m.	

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Oleum *Crotonis*	½ to 1 m.	
,, *Cubebæ*	5 to 20 m.	232
,, cum Cocaina, 2 per cent.		200
,, Deelinæ		398
,, Erigeron Canadense		531
,, *Eucalypti*	½ to 3 m.	246
,, Fagi Pyroligneum		425
,, Gaultheriæ	10 m.	xxii 33
,, *Graminis Citrati*		xxii
,, *Gynocardiæ*	5 to 60 m.	xxii, 376
,, Homatropinæ		108
,, ,, cum Cocaina		108
,, Hyoscinæ		303
,, *Juniperi*	½ to 3 m.	
,, ,, Pyroligneum		424
,, *Lavandulæ*	½ to 3 m.	
,, *Limonis*	½ to 3 m.	
,, Lubricans		12
,, *Menthæ Piperitæ*	½ to 3 m.	
,, ,, *Viridis*	½ to 3 m.	
,, *Morrhuæ*	1 to 4 dr.	377
,, ,, cum Creosoto	1 to 4 dr.	225
,, ,, Phosphoratum	1 to 4 dr.	403
,, ,, cum Quinina	1 to 4 dr.	371
,, Myrciæ		62
,, *Myristicæ*	½ to 3 m.	
,, Myrti		534
,, Neroli		111
,, Nitroglycerini, 1 per cent.	1 to 2 m.	366
,, *Olivæ*	¼ to 1 oz.	378
,, ,, cum Acido Oleico	1 to 2 dr.	379
,, Paraffini		396
,, Petrolei		396
,, ,, Flavum		395
,, *Phosphoratum*	1 to 5 m.	403
,, Picis Rectificatum		424
,, *Pimentæ*	½ to 3 m.	
,, *Pini Pumilionis*		418
,, ,, Sylvestris		418
,, *Ricini*	1 to 8 dr.	379
,, *Rosæ, syn. Otto of Rose*		380
,, *Rosmarini*	½ to 3 m.	
,, Rusci Pyroligneum		425
,, Rutæ	1 to 4 m.	
,, Sabinæ	1 to 4 m.	
,, *Santali*	5 to 30 m.	381

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Oleum Sassafras		536
,, *Sesami*		xxii, 127
,, Sinapis Expressum		473
,, ,, Volatile		473
,, Staphisagriæ		234
,, *Terebinthinæ*	2 to 10 m., Anthelmintic 3 to 4 dr.	417
,, ,, Gallicum	30 m. every ½ hour.	401
,, Theobromatis		502
Olive Oil		378
,, Capsules		378
,, Emulsion		379
,, with Oleic Acid		378
Oliver Bark		xxii
Oliver's Test		596
Oliveri Cortex		xxii
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Ophthalmic Discs :—		
Alum	1-250 gr.	74
Atropine	1-2000, 1-1000, 1-500, 1-250 gr.	104
,, B.P.	1-5000 gr.	104
{ ,,	1-1000 gr. }	104
{ Cocaine	1-200 gr. }	
{ Atropine	1-50 gr. }	104
{ Cocaine	1-50 gr. }	
{ Atropine	1-200 gr. }	105
{ Cocaine	1-100 gr. }	
Borax	1-250 gr.	
Cadmium Sulphate	1-250 gr.	
Cocaine	1-100, 1-200 gr.	203
,, B.P.	1-50 gr.	203
{ Cocaine	1-50 gr. }	109
{ Homatropine	1-50 gr. }	
{ Cocaine	1-200 gr. }	105
{ Atropine	1-5000 gr. }	
{ Cocaine	1-200 gr. }	109
{ Homatropine	1-5000 gr. }	
{ Cocaine	1-200 gr. }	109
{ Homatropine	1-200 gr. }	
{ Cocaine	1-200 gr. }	412
{ Physostigmine	1-1000 gr. }	
Copper Sulphate	1-250 gr.	
Daturine	1-5000 gr.	234
Duboisine	1-5000 gr.	238
Eucaine	1-100, 1-50 gr.	211
Euphthalmine	1-100, 1-50 gr.	111
Gallic Acid	1-250 gr.	
Gelseminine	1-500 gr.	270
Homatropine	1-1000, 1-5000 gr.	109

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Ophthalmic Discs :—		
Homatropine B.P.	1-100 gr.	109
Hyoscine	1-500, 1-200 gr.	304
Hyoscyamine	1-5000 gr.	306
Iodoform	1-1000 gr.	313
Lead Acetate	1-500 gr.	
Lead	1-500 gr.	
Opium	1-250 gr.	
Mercuric Chloride	1-100,000 gr.	290
Morphine	1-500 gr.	353
,,	1-500 gr.	353
Atropine	1-5000 gr.	
Physostigmine 1-1000 gr. (off.)	1-500, 1-250 gr.	412
Pilocarpine	1-500 gr.	331
Potassium Nitrate	1-500 gr.	429
Scopolamine	1-500, 1-200 gr.	304
Silver Nitrate	1-500 gr.	89
Thymol	1-1000 gr.	505
Zinc Sulphate	1-250 gr.	525
,,	1-250 gr.	525
Opium	1-250 gr.	
Opium	½ to 2 gr.	383
Opo—as applied to animal extract names		565
Opticine		567
Orchidin, Orchitic Fluid		568, 569
Ordeal Bark		245
,, Beans		410
Orexine Tannate	4 to 8 gr.	189
Organotherapy		565
Orizabin	2 to 6 gr.	333
Oro-nasal Inhalations		226
Orris Root		335
Orthoform	1½ to 3 gr.	213
,, Hydrochloride		213
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,, methyl-amino-phenyl-sulphate		390
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Osmium Tetroxide		24
Otto of Rose, syn. Oleum Rosæ		380
Ouabaïn		492
Ourari	1-20 to ½ gr.	232
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,, Pills		338
,, Injections		338
,, Tablets		338
Ox Bile	5 to 15 gr.	254
Oxo		251
Oxide of Ethyl	10 to 60 m.	51
Oxy-butyric Acid in Urine		593
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,, Apparatus		301
,, Cylinders		301
,, Inhalation Bag		301
Oxygenator		300
Oxymel	1 to 2 dr.	
,, *Scillæ*	½ to 1 dr.	
,, *Urgineæ*	½ to 1 dr.	xxiii
Oxysparteina	½ to 1½ gr. daily	486
Oxysparteinæ Hydrochloridum	½ to 1½ gr. daily	486
Oxytoluyltropeine		103
Ozokerite		392
Ozone Papers		429
Ozonic Ether (as blood test)	½ to 1 dr.	299
,, Inhaler		318
Pagenstecher's Ointment		294
Palladium Chloride as test		612
Palmetto		536
Panama Bark		535
Pancreas		387
Pancreatic Diastase		387
,, Emulsion	1 to 3 dr.	389
Pancreatin, Pancreatinum	2 to 4 gr.	387
Pancreatis, Extractum		387
Pancreatised Farinaceous Food		389
Pansy, Wild	10 to 60 gr.	539
Papain	1 to 8 gr.	391
Papaw Milk or Juice	3 to 10 gr.	391
Papayotin	1 to 8 gr.	391
Para-acet-phenetidin	5 to 10 gr.	189
Paracarmine Mayer		602
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Paracotoin	1½ to 3 gr.	223
Paracresylol		11
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Paraguay Tea		134
Paraldehyde Mixture	1 to 2 oz.	64
Paraldehydum, Paraldehyde	½ to 2 dr.	64
Paramonochlor phenol		17
Para-phenetol Carbamide		467
Para-tolyl-dimethyl-pyrazolone Salicylate	5 to 20 gr.	194
Paregoric	½ to 1 dr.	386
Paroleine		396
Parotid Gland		577
Parrish's Chemical Food	1 dr.	263
Parsley		83
Pasta Arsenicalis		96
,, Gummosa		111
,, Iodi et Amyli		323
,, Londinensis		479
,, Potassæ cum Calce		479
,, Resorcini		463
,, ,, Fortior		463
,, ,, Mitis		463
,, ,, et Zinci Oxidi, K.C.H.		463
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Pautauberge's Solution	1 tablespoonful	225
Pavy's Cupric Test		603
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Pearson's Arsenical Solution		98
Pegnin		399
Pelargonium flabellifolium	5 to 20 gr.	535
Pelletierina	3 to 6 gr.	397
Pelletierinæ Hydrobromidum	5 to 8 gr.	397
,, Sulphas	5 to 8 gr.	397
,, Tannas	5 to 8 gr.	397
Pellotine	1-3 to 2-3 gr.	528
Pencils of Iodoform		313
Pentyl Hydride, or Pentylene		396
Pepsalia		476
Pepsin (Soluble and Insoluble)	5 to 10 gr.	398
,, Tablets, 3 gr. in each	1 with meals	400
,, ,, with Bismuth	,,	400
Pepsina Amylacea	5 to 15 gr.	399
,, Liquida	1 dr.	399
,, Porci	5 to 10 gr.	398
Pepsine Acide Amylacée		399
Pepsin-Essenz (Liebreich's)	1 to 2 dr.	399
Pepsinum Saccharatum		399
Peptone		399
,, Bile Test		596
,, Water		626
Peptonised Beef		400
,, ,, Essence		252
,, ,, Jelly		389
,, ,, Suppositories		400
,, Chicken Jelly		389
,, Iron, Solution of	1 to 4 dr.	261
,, ,, and Manganese, Solution of	1 to 4 dr.	262
,, ,, and Quinine, Solution of	1 to 4 dr.	262
,, Milk		388
Peptonising Pills		400
Peptonoids of Beef		400
Percentage and Grains per Fluid Ounce Table		641
Periplaneta Orientalis		529
Periwinkle		539
Perles of Apiol, 3 m. in each	1 or 2	83
,, Carbolic Acid, 1 gr.	1 or 2	13
,, Chloroform	1 or 2	169
,, Creosote, 1, 2 and 3 m.	1 to 4	225
,, Ether, 3 m. in each	1 to 4	53
,, ,, 2 m. and Turpentine, 3 m.	1 to 4	53
,, Guaiacol, 1, 2, and 3 m.	1 or 2	228
,, Izal, 2 m.	1 or 2	179
,, Monobromated Camphor, 2 gr.	1 to 3	144

NAME.	DOSE.	PAGE
Perles of Phosphorated Oil, $\frac{1}{100}$, $\frac{1}{65}$, and $\frac{1}{32}$ gr.	1 or 2	403
,, Quinine Sulphate	1½ gr. in each	441
,, Tar	1 or 2	424
,, Turpentine, Venice, 3 m.		
Peronin	⅛ to ½ gr.	358
Peroxide of Hydrogen	½ to 2 dr.	298
,, of Sodium		300
Persulphates		482
Pessaries, Gelatin Mass for		276
,, Hollow		276
,, with Cacao Butter	15, 20 (*flat* shape), 60 or 120 gr. in each :—	
Pessus Acidi Borici, 10 gr.		6
,, ,, Carbolici, 2 gr.		
,, ,, Tannici, 10 gr.		
,, Acid Tannic, 10 gr. Morphine, 1 gr.		
,, Acid Tannic, 6 gr. Opium, 2 gr.		
,, Alum, 15 gr.		
,, Atropinæ, 1-20 gr.		106
,, Bellad. Ext., 2 gr. Morphine, ½ gr.		
,, Belladonnæ Ext. Alc., 1½ and 3 gr.		119
,, Bismuth Subnit., 15 gr.		
,, Bismuthi Oxychloridi, 10 gr.		122
,, Boroglyceridi, 70 gr.		5
,, Chloral Hydrate, 10 gr.		
,, Cocainæ, ½ gr.		200
,, Coninæ, ½ m.		220
,, Eucalypti Olei, 30 m.		248
,, Hyd. Ammon., 30 gr.		
,, Ichthyol		308
,, Iodoformii, 3 or 5 gr.		313
,, Iodoform, 5 gr. Eucalyptus Oil, 5 m.		
,, Opium Powder, 2 and 3 gr.		
,, Plumbi Iodidi, 5 gr.		
,, ,, Iodidi, 5 gr. Atropinæ, 1-20 gr.		
,, Potassii Bromidi, 10 gr.		
,, ,, Iodidi, 10 gr.		
,, Quininæ Hydrochloridi, 3 to 5 gr.		437
,, Zinci Oxidi, 10 gr., 15 gr.		
,, ,, Sulphocarbolatis, 5 gr., 10 gr.		
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,, Cerate of		394
,, Emulsion of	1 to 4 dr.	395
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,, Jelly		393
,, Ointment		396
,, *Spirit*		396
Petrosulphol		309
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Pharbitisin		xxi
Pharbitis Nil		xxi
Phellandrene		247
Phenacetinum	5 to 10 gr.	189
,, cum Caffeina Effervescens	1 to 2 dr.	190
Phenalgin	5 to 20 gr.	182
Phenazonum	5 to 20 gr.	190
,, Effervescens 8 °/₀	1 to 2 dr.	191
Phenic Acid	1 to 3 gr.	9
Phenocoll Hydrochloridum	7 to 15 gr.	194
,, Salicylate	10 to 30 gr.	195
Phenol	1 to 3 gr.	9
,, Bismuth	10 to 30 gr.	125
,, Iodized		13
,, Lotion		12
,, Mercury	½ to 2 gr.	284
,, *Phthaleïn*	½ to 4 gr.	16
,, ,,	as a Test	613
,, Salicylas	5 to 15 gr.	39
,, Sodio-Sulphoricinate		380
,, Sodique		15
Phenosalyl	1 to 2 m.	17
Phenyl-acetamide	1 to 3 gr.	180
,, Alcohol	1 to 3 gr.	9
,, -amine, *syn.* Aniline		182
,, -benzamide	3 to 12 gr.	183
,, -dihydro-chinazolin Tannate	3 gr.	189
,, -dimethyl iso-pyrazolone	5 to 20 gr.	190
,, hydrate	1 to 3 gr.	9
,, -hydrazine		
,, ,, Hydrochloride		606
,, -methyl Acetone	1½ to 5 m.	182
,, *Salicylas*	5 to 15 gr.	39
,, -urethane	3 to 6 gr.	516
Phenylene-diamine		610
Phloridzin, *syn.* Phlorizin		535
,, Test for Kidney		188

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Phosote		227
Phosphates, Saccharated Wheat		410
,, in Urine		607
'Phospho-ammonio-Phenylacetamide'	5 to 20 gr.	182
Phosphorated Cod Liver Oil	1 to 4 dr.	403
,, Ether		402
,, Oil	1 to 4 m.	403
,, Suet, 1 in 10		404
Phosphorus	1-100 to 1-20 gr.	401
,, Red, or Amorphous	1 gr. (?)	402
,, Perles	1-64 and 1-32 gr. in each	403
,, Pills		403
,, Solutions of		402
Phosphotal		227
Photoxylin		217
Phthalic Anhydride		16
Physiological Salt Solution		474
Physostigmatis Semina	1 to 4 gr.	410
Physostigmina	1-100 to 1-50 gr.	411
Physostigminæ Hydrobromidum	1-60 to 1-20 gr.	411
,, Salicylas	1-60 to 1-20 gr.	411
,, *Sulphas*	1-60 to 1-20 gr.	411
Phytolaccin	1 to 5 gr.	535
Pichi		535
α-Picoline		220
Picraconitine		47
Picric Acid		28
,, Test Solution (Albumin)		594, 595
,, ,, (Glucose)		606
Picrocarmine Solution		602
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Picrorhiza	10 to 50 gr.	xxii
Picrotoxinum	1-100 to 1-25 gr.	412
Pictet's Chloroform		163
Pierre's Eau Dentifrice		40
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,, Tannici		272
,, Antisepticum		13
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,, Chloral et Camphoræ		158
,, Chrysarobini, 1 to 9		171
,, ,, et Pyrogall 1		171
,, contra Tineam		280
,, Diphtheria, Loeffler's		258
,, Ferri Perchloridi	60 to 120 gr. in 1 oz.	258

NAME.	DOSE.	PAGE
Pigmentum Iodi...		320
,, ,, Æthereale		320
,, ,, Carbolicum		13
,, ,, et Aconiti, K C.H.		320
,, ,, et Olei Pici		320
,, Mandl		321
,, Menthol		349
Pig's Gall...		254
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,, Gelatin-coating		414
,, Keratin-coating		415
,, Pearl-coating		415
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,, Varnishing...		414
Pilocarpidine		330
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Pilocarpinæ Carbolas		331
,, Hydrochloridum	1-20 to ⅓ gr.	329
,, *Nitras*	1-20 to ½ gr.	329
,, Phenas		331
,, Salicylas	1-20 to ½ gr.	331
Pilocarpine Injection, and Directions for		330
Pilocarpus Jaborandi	5 to 60 gr.	328
,, Microphyllus and Trachylophus		328
Pilulæ		413
Acidi arseniosi, 1-50 gr. Quininæ Sulphatis, 1 gr. Strychninæ Sulphatis, 1-64 gr. Pil. Phosphori Comp, 1-50 gr.		
Acidi Arseniosi, 1-120, 1-60, 1-50, 1-30, 1-20 gr.		95
,, Carbolici, 2 gr.		13
Aconiti Rad., 1-8 gr.	1 hourly	50
Aconitinæ ...	1-600, 1-250 gr.	49
Allii Ext., 4 gr.		527
Aloes Barbadensis	4 to 8 gr.	70
,, Cascara et Hyoscyami		71
,, cum Mastiche		70
,, *et Asafetidæ*	4 to 8 gr.	70
,, *et Ferri*	4 to 8 gr.	70
,, *et Myrrhæ*	4 to 8 gr.	70
,, Nucis Vomicæ et Belladonnæ ...		71

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Pilulæ :—		
Aloes Socotrinæ	4 to 8 gr.	71
,, Soc., 1 gr. Rhei, 1 gr. Mastich. 1 gr.	1 with dinner	
Aloin, 1-10 and 1 gr.		
,, Compositæ	1 before last meal	74
,, Strychninæ et Belladonnæ	1 or 2	74
Aperiens = Pil. Hyd. Col. Ipecac. et Hyos. "78" U.C.H.		
Argenti Nitratis	1-6 gr.	
,, ,, et Morphinæ	1-6 gr.	88
Arsenicalis, 1-20, 1-30, 1-60, 1-100, 1-120 gr.		95
,, et Strychninæ, 1-60 gr. each		96
Arsenii et Hydrargyri Iodidi	1 or 2	97, 286
,, Ferri, et Hydrargyri Iodidi	1 or 2	286
Arsycodile	0·025 gm.	101
Asafetidæ Compositæ	4 to 8 gr.	
Asiaticæ	1 or 2 daily	96
Aspirin	5 gr. 1 or more	
Atropinæ, 1-100, 1-120, 1-80 and 1-60 gr.	1 at bedtime	108
Auri et Sodii Chloridi	$\frac{1}{30}$ to ½ gr.	113
Atropinæ Arsenici, et Quininæ	every 3 or 4 hours	106
Belladonnæ Fol., 1-10 gr.	1 hourly	
Beta-Naphthol., 3 gr. and 5 gr.		359
Blaud's Ferruginous		256
Butyl Chloral, 3 gr.		131
,, Hydr., 3 gr. Gelsemininæ Hydrochl., 1-200 gr.		131
Caffeinæ, 3 gr.		132
Calcis Sulphuratæ, 1-10 gr., 1-6 gr., ¼ gr., ⅓ gr., ½ gr., and 1 gr.		140
Calcii Phosph., 2 gr. Ferri Phosph., 2 gr. Syrup, *q.s.*	1 thrice daily	
Cambogiæ Compositæ	4 to 8 gr.	71
Camphoræ		143
,, Monobromatæ, 3 gr.		144
,, Salicylatæ		145
Cannabin Tannatis, 2, 3 gr.		147
Cascara Sagrada Ext., 2 gr.		
,, ,, Compositæ	1 at night	154
Catharticæ Compositæ, U.S.		
Ext. Col. Co., 1-3 gr. P. Ext. Jalap, 1 gr. Hyd. Subchlor., 1 gr. Cambogiæ, ¼ gr.	1 or 2	

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Pilulæ :—		
Chloral Hydratis, 5 gr.	1 to 3	158
,, 5 gr. Morphinæ Hydrochl. 1-8gr.	1 or 2	
Cocainæ Hydrochloridi	⅕ gr.	204
Codeinæ Compositæ, ¼ to 2 gr.	1 thrice daily	214
Colocynthidis Compositæ	4 to 8 gr.	71
,, *et Hyoscyami*	4 to 8 gr.	71
,, cum Ipecacuanha, Aperient Pills, '78' U. C. H. Pil. Coloc. Co., 2 gr. Pil. Hydrarg., 1½ gr. Ext. Hyoscy. vir. 1 gr. Ipecac. Pulv. ⅓ gr.		
Conii Compositæ Ext. Conii, 5 Ipecacuanha, 1 Theriaca, *q.s.*	5 to 10 gr.	
Coninæ Hydrobromidi, ⅓ gr.		220
Creosoti, 1 in 2	2 to 6 gr.	225
Damianæ Compositæ	1 thrice daily	234
Digitalis Fol., ½ gr.	1 thrice daily	
,, Opii et Quininæ (Heim's) Digitalis, ½ gr. Opii Pulv., ¼ gr. Quininæ Sulph., 1 gr. Ipecac., ¼ gr.	1 thrice daily	
,, Composita ,,		236
Digitoxin, 1-250 gr.		237
Easton's	2 or 3 daily	265
,, with Acid Arsen., 1-60 gr.		265
Ergotini, 1, 2, or 3 gr.		242
Euonymin, 2 gr.		250
Exalgin, 1 gr.		185
Extracti Cannabis Indicæ, ¼, ⅓, ½, 1 gr.		146
Ferri Arsenicalis		96
,, ,, cum Strychnina Hyd. gr. 1-60		96
,, *(Blaud)*	5 to 15 gr.	256
,, Carbonici	5 to 20 gr.	256
,, ,, Blaudii		257
,, Carb. Sacch. 4 gr., cum Syr.	1 to 4	256
,, Glycerophosphatis	1 with meals	26
,, Hypophosphitis cum Strychnina	2 or 3 daily	408
,, Iodidi, 1 in 3½	3 to 8 gr.	263
,, Quininæ et Strychninæ Phosph.	2 or 3 daily	265
,, ,, ,, ,, c. Acid. Arsen.		265
,, Sulph. Exsicc., 3 gr., 5 gr., cum Syr.	2 or 3 daily	266
,, Redacti, 1 gr. and 2 gr.	2 or 3 daily	

NAME. DOSE. PAGE

Pilulæ :—

Ferri cum Strychnina, T. H.

{ Ferri Sulph., 1 gr. / Strychninæ Sulph., 1-30 gr. / Glyc. Tragac., *q.s.* } 2 or 3 daily.

Galbani Compositæ ... ... 4 to 8 gr.

{ Asafetida, Galbanum / Myrrh, of each 2 / Syrup of Glucose, 1 } ... 4 to 8 gr.

{ Pil. Hydrarg, 1 gr. / Pil. Coloc. c̄. Hyoscy., 4 gr. } 'Third night.'

Gossypii Compositæ ... ... 3 or 4 daily 278

Hydrargyri (1 in 3), 1 gr., 2 gr., 3 gr., 4 gr., and 5 gr.

Hydrarg. et Digitalis Co., St. Bart's. 236

{ Pil. Hydrarg., 2½ gr. / Pil. Coloc. Co., 2½ gr. } ... ... 1 or 2

{ Pil. Hydrarg., 1½ gr. / Ext. Coloc. Co., 2 gr. / Ipecac., ½ gr. / Ext. Hyoscyam., 1 gr. } ... ... 1 or 2

{ Pil. Hydrarg., 2½ gr. / Pil. Rhei Co., 2½ gr. } ... ... 1 or 2

{ Pil. Hydrarg., 3 gr. / Opii Pulv., ¼ gr. } ... ... 2 or 3 times a day

Hydrarg. cum Creta, 1-3 gr., ½ gr. every 1 or 2 hrs.

{ Hydrarg. cum Creta ⅓ gr. / Pulv. Ipecac. Co. 3 gr. } ... 1 every 4 hours

{ Hydrarg. cum Creta, 2 gr. / Pulv. Ipecac. Co., 3 gr. } ... 1 or 2

Hydrarg. Cyanidi, 1-12 gr. and 1-10 gr. 1 twice daily 285

Hydrargyri Gallatis, ½ gr. and 1 gr.... 3 or 4 daily 285

Hydrargyri Iodidi Flavi ... ... 1-8 gr. 287

Hydrarg. Iodidi Rub., 1-50, 1-36, 1-24, 1-12, 1-16, 1-8 gr. 1 twice daily 286

Hydrarg. Iodidi Rubri, $\frac{1}{8}$ gr., et Potassii Iodidi, 4 gr. 287

Hydrarg. Iodidi Virid. 1-6 gr., 1-4 gr., 1-3 gr. and ½ gr. 287

{ Hydrarg. Iodidi Virid., ½ gr. / Opii Pulv., ¼ gr. }

Hydrarg. Perchloridi, 1-12, 1-16, 1-20, 1-32 and 1-40 gr. 290

Hydrarg. Subchloridi. ½ gr., 1 gr., 2 gr., and 3 gr.

Hydrarg. Subchloridi Compositæ ... 4 to 8 gr. 293

{ Hydrarg. Subchlor., 1 gr. / Pil. Col. c. Hyos., 4 gr. }

{ Hydrarg. Subchlor., 2 gr. / Opii Pulv., 1 gr. } ... ... one

{ Hydrarg. Subchlor., 1 gr. / Opii Pulv., ¼ gr. } ... every 4 hours

{ Hydrargyri Subchloridi, 2 gr. / Extracti Colocynthidis Compositi, 5gr. / Extracti Hyoscyami, 2 gr. } Zittmann's Pill L L.

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Pilulæ :—		
Hydrargyri Tannatis, 1, 1½, 2, 3, 4 gr.	1 thrice daily	294
Hydrastin, ¾ and 1 gr.	1 twice a day	296
Hyoscinæ Hydrobrom. 1-150 gr.		303
Hyoscyaminæ, 1-100 gr.	1 hourly	306
Ichthyol, Ammonium, Lithium- and Sodium-	4 to 12 daily	308
Iodoformi, ½, 1 and 2 gr.	1 twice or thrice a day	313
Ipecacuanhæ, 1·5 gr. and ½ gr.		
Ipecac. Co., Pulv., 5 gr.	1 or 2	
Ipecacuanhæ cum Scilla (5 % Opium)	4 to 8 gr.	326
„ *cum Urginea*	4 to 8 gr.	xxiii
Iridin, 2 gr.	1 at bedtime	328
Jalapæ	1 to 3	333
Kreosoti	2 to 6 gr.	225
Lithii Guaiacatis, 5 gr.		340
Methylene Blue, ½, 1 and 2 gr.		188
Morphinæ Bimeconatis, ¼ gr.		356
„ Hydrochl., ¼ gr.		
„ Sulphatis, ¼ gr.		356
Naphthalini	3 gr.	362
Neuralgic	2 at outset, then 1 hourly	131
Nitroglycerini, 1-100 gr. and 1-50 gr.		366
Nucis Vomicæ Ext., 1-10 gr. and ¼ gr.		
Olei Crotonis, 1 m.		
Opii Pulveris, gr. ½ and gr. 1		
Orexin Tannatis, 3 gr.	1 to 3	189
Pancreaticæ	1 after meals	389
Pepsin, 2 gr. and 3 gr.		398
Peptonising		400
Phosphori, 2 %	1 to 2 gr.	403
„ (Martindale), 1-100 gr., 1-50 gr., and 1-30 gr.	1 after meals	404
Phosphori cum Ferro	„	404
„ cum Ferro et Nuce Vomica	„	405
Phosphori cum Ferro et Quinina	„	405
„ Ferro, Quinina et Strychnina	„	405
„ Nuce Vomica		405
„ Quinina	„	405
„ Strychnina	„	405
„ Strychnina et Ferro	„	405
Picis Liquidæ, 2 gr.	1 or 2	424
Picrotoxini, 1-30, 1-50, 1-60, 1-100 gr.	1 at bedtime	413
Pilocarpinæ Nitratis, 1-20 gr.		331
Plumbi cum Opio (12½ % Opium)	2 to 4 gr.	385

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Pilulæ :—		
Plummer's	4 to 8 gr.	293
Podophyllin, 1-30 gr., 1-20 gr., 1-15 gr., ¼ gr., ½ gr., and 1 gr.		426
Podophyllin Composita (Resin ¼ gr.)	1 or 2 at bedtime	426
Podophyllin (Resin 1-12 gr.) et Quininæ	with dinner	426
Potassii Bichromatis, 1-10 gr.	1 thrice daily	427
,, Iodidi, 1 gr.		323
,, Permanganatis, 1, 1½, 2, 3 and 5 gr.		317
Quininæ cum Belladonna		118
,, Salicylatis, 3 gr.	every 6 hours	439
,, *Sulphatis*, 1, 2, 3, 4 and 5 gr.		441
Rhei Compositæ, 2½ gr., 3 gr., 4 gr. and 5 gr.	4 to 8 gr.	71
Pil. Rhei Comp., 4 gr. Ext. Nucis Vom., ½ gr.	2 or 3 times daily.	
Pil. Rhei Comp., 2½ gr. Ext. Taraxaci, 2½ gr.	at dinner or bedtime	
Saponis Compositæ (20°/₀ Opium)	2 to 4 gr.	385
Scammonii Compositæ	4 to 8 gr.	
Scillæ Compositæ	4 to 8 gr.	
Sodii Arsenatis, 1-32 and 1-64 gr.		98
,, Cacodylatis, ½ gr.		99
Sparteinæ Sulphatis, ¼ gr.		486
Strophanthi, Tinct. 4 m. and 8 m.	1 to 3	490
Strychninæ,—1-100 gr., 1-36 gr., 1-24 gr. and 1-20 gr.		493
Sulphatum	2 thrice daily	141
Terebinthinæ Chiæ, 3 gr.	2 every 4 hours	502
Thyroglandin	1 gr.	575
Trium Phosphatum		265
,, Valerianatum		443
Urgineæ Composita	4 to 8 gr.	xxiii
Zinci cum Belladonnâ	1 or 2	524
,, Phosphidi, 1-6 gr.	1 thrice daily	406
,, Valerianatis, 3 gr.	,,	517
,, Valerianatis, 1 gr. Pil. Asafetidæ Co., 2 gr.	T. H. ... 1 or 2	517
Pine Cure		417
,, Oxygen Treatment		417
Pinol		418
Pinus Canadensis		535
,, Maritima		401
,, Pumilio		418
,, Sylvestris		417
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Piperazine, Quinate	daily 80 gr.	421
„ Water, Aërated		420
Piperidine, Acid Tartrate	15 gr.	231
„ Guaiacolate	5 to 30 gr.	230
„ -para-Sulphamine Benzoate	5 gr.	231
Piperin, Piperinum	1 to 10 gr.	422
Piperonal		532
Piscidia		423
Pitayo Bark		173
Pitchblende		449
Pitfield's Stains		621
Pituitary Body		577
Pix Burgundica		424
„ *Carbonis Præparata*		178
„ *Liquida*	2 to 10 gr.	423
Placental Extract		568
Plague Serum		548
Plasmon Biscuits, Arrowroot, Cocoa, Chocolate		254
Pleurisy Root		529
Plumbi Acetas	1 to 5 gr.	
„ *Emplastrum*		374
„ Oleatum		374
„ Oleatis Unguentum		375
„ *Subacetatis Glycerinum*		273
Plummer's Pill	4 to 8 gr.	293
Pneumonia Serum		550
Pneumobacillus		619
Pneumococcus		618
Podophylli Resina and *Indica*	$\frac{1}{10}$ to 1 gr.	xxii, 426
„ *Rhizoma* and *Indica*		xxii, 426
Podophyllin	¼ to 1 gr.	426
Podophyllotoxin	1-10 to 1-8 gr.	426
Points of Alum		74
„ Copper Sulphate		74
„ Zinc Sulphate		525
„ „ „ and Alum		525
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Poke Root		535
Pollantin		535
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„ Discs		456
„ Spinthariscope		455
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Pommade aux Concombres		232
Pond's Extract		282
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Potassa cum Calce		427
,, *Sulphurata, syn.* Liver of Sulphur	2 to 8 gr.	
Potassic Aperient	1 dr.	429
,, ,, with Pot. Sulphocarbolate	1 dr.	429
Potassii Acetas	10 to 60 gr.	
,, *Bicarbonas*	5 to 30 gr.	
(10 neutralise 7 of Citric and 7½ of Tartaric Acid)		
,, *Bichromas*	1-10 to 1-5 gr.	427
,, *Bromidum*	5 to 30 gr.	126
,, Cantharides	1-100 to 1-200 gr. hypod.	150
,, *Carbonas*	5 to 20 gr.	
,, *Chloras*	5 to 15 gr.	
,, Chloridum		428
,, *Citras*	10 to 40 gr.	428
,, ,, Effervescens	1 dr.	
,, *Cyanidum*	$\frac{1}{12}$ to $\frac{1}{4}$ gr.	428
,, Glycerophosphas	3 to 8 gr.	26
,, Guaiacol-sulphonate	15 gr.	231
,, Hypophosphis	1 to 6 gr.	406, 408
,, *Iodidum* (*incompatibility*, 54, 257, 494)	5 to 20 gr.	428
,, *Nitras*	5 to 20 gr.	428
,, Nitris	¼, to 1½ gr.	429
,, Osmas		24
,, *Permanganas*	1 to 3 gr.	346
,, Persulphas		482
,, Phosphas	1 to 10 gr.	430
,, Salicylas	5 to 30 gr.	35
,, Silicas		482
,, Succinas	5 to 10 gr.	430
,, *Sulphas*	10 to 40 gr.	429
,, *Tartras*	½ to 4 dr.	
,, ,, *Acidus*	20 to 60 or 240 gr.	430
,, Telluras	$\frac{1}{3}$ gr.	430
Potassium Silicate		482
Potassio-Cupric Tartrate Solution		602
,, Mercuric Iodide ,,		610
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,, Sterules		92
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,, Serotina		80
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Ptomaines		431
Ptychotis Oil	½ to 3 m.	xxii
Puff Ball		533
Pulsatilla		432
,, Camphor	1-60 to 1-12 gr.	432
Pulvis Acidi Borici Compositus		6
,, Acetanilidi Compositus	3 to 5 gr.	181
,, Aloes cum Canella	3 to 10 gr.	73
,, *Antimonialis*	3 to 6 gr.	
,, Arsenici Escharoticus		96
,, Basilicus	4 to 8 gr.	293
,, Bismuthi Compositus (Ferrier's Snuff)		124
,, *Buteæ Seminum*	10 to 20 gr.	xix
,, *Catechu Compositus*	10 to 40 gr.	
,, Cinchoninæ Compositus	3 to 12 gr.	177
,, *Cinnamomi Compositus*	10 to 40 gr.	
,, *Cretæ Aromaticus*	10 to 60 gr.	385
,, ,, *Aromaticus cum Opio* (2·5 °/ₒ)	10 to 40 gr.	385
,, *Elaterini Compositus*	1 to 4 gr.	239
,, Eucainæ		211
,, *Glycyrrhizæ Compositus*	60 to 120 gr.	278, 471
,, Guaiaci Compositus	20 to 40 gr.	498
,, Hydrargyri cum Creta et Belladonnæ		118
,, Iodoformi		311
,, *Ipecacuanhæ Compositus* (10 °/ₒ Opium)	5 to 15 gr.	325
,, ,, sine Emetina	5 to 20 gr.	325
,, Jacobi = Pulvis Antimonialis		
,, *Jalapæ Compositus*	20 to 60 gr.	333
,, *Kaladanæ Compositus*	20 to 60 gr.	xxi
,, *Kino Compositus* (5 °/ₒ Opium)	5 to 20 gr.	385
,, Liquiritiæ Compositus	60 to 120 gr.	278
,, Lobeliæ Compositus		429

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Pulvis Magnesii Boro-Citratis Co.	66 gr.	9
,, *Opii Compositus* (10 °/o Opium)	2 to 10 gr.	385
,, Pancreaticus Alkalinus (Benger) 20 gr. in each		389
,, Pectoralis (Kurellæ)	60 to 120 gr.	278
,, Potassii Nitritis Compositus	43½ gr.	429
,, pro Pedibus		75
,, *Rhei Compositus*	20 to 60 gr.	
,, Rosæ Compositus		381
,, Salicylicus cum Talco, P.G., 1 in 33		34
,, Salis Carolini Factitii Effervescens	60 to 120 gr.	484
,, Santonini Compositus	5 gr.	468
,, *Scammonii Compositus*	10 to 20 gr.	
,, *Seidlitz*		485
,, *Sodæ Tartaratæ Effervescens, syn. Seidlitz*		485
,, Sodii Chloridi Compositus (for a gargle)		476
,, *Tragacanthæ Compositus*	20 to 60 gr.	510
,, Zinci et Amyli		524
,, ,, et Hydrargyri Subchloridi		524
,, ,, Oleatis		375
Pumiline		418
Punica Granatum		397
Punicine Sulphate	5 to 8 gr.	397
Purgatin	7½ to 15 gr.	155
Purgatives, Hypodermic, *vide* Apocodeine, Colocynthin		
Purgen		16
Purins and Purinometer		607
Pusol		14
Pussy Willow		536
Pyoktanin		195
Pyraconitine		48
Pyramidon 5 to 8 gr., and Salts	8 to 15 gr.	193
Pyranum		2
Pyrazolonum-Phenyldimethylicum Salicylicum	15 to 30 gr.	193
Pyrenol		2
Pyridine	5 to 10 m.	433
Pyrocatechin		302
Pyrogallol	½ to 1½ gr.	29
,, Acetate		30
,, -Bismuth	2 to 8 gr.	126
,, Oxidatum		30
Pyroxylic Spirit	30 to 60 m.	63
Pyroxylin		217
Quassin, Quassine Cristallisée	1-30 to 1-3 gr.	535
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Quineti Sulphas	1 to 5 gr. or more	434
Quinetum	1 to 5 gr. or more	433
Quinidinæ Sulphas	1 to 20 gr.	431
Quinidine		431
Quinina	1 to 4 gr.	434
Quininæ Arsenas	1-8 to ½ gr.	435
,, Chloras	1 to 5 gr.	435
,, Citras	1 to 5 gr.	435
,, Dihydrochloridum (Acid Hydrochloride)		437
,, et Ferri Chloridum	1 to 3 gr.	437
,, Fluoridum	1-20 to ½ gr.	21
,, Glycerophosphas	3 to 8 gr.	26
,, Hydriodidum	1 to 5 gr.	438
,, ,, Acidum	1 to 4 gr.	438
,, Hydrobromidum	1 to 5 gr.	436
,, ,, Acidum	½ to 2 gr. (hypod.)	436
,, *Hydrochloridum*	1 to 10 gr.	437
,, ,, *Acidum*	1 to 10 gr., ½ to 2 gr. hypod.	437
,, Hydrochloro-Carbamidum	5 to 15 gr.	438
,, ,, -Sulphas	1 to 10 gr.	438
,, Iodas	1 to 5 gr.	438
,, Lactas	1 to 5 gr.	438
,, Oleatum, 1 in 4		371
,, Phosphas	1 to 6 gr.	439
,, Salicylas	2 to 6 gr.	439
,, *Sulphas*	1 to 10 gr.	439
,, ,, Acidus (Bisulphate)	1 to 10 gr.	442
,, Sulphocarbolas	1 to 6 gr.	442
,, Tannas	1 to 4 gr.	443
,, Valerianas	1 to 4 gr.	517
Quinine Urea	5 to 15 gr.	438
,, and Uranium Chloride	3 to 6 gr.	513
,, Urethane	½ to 3 gr.	515
Quinoidine	1 to 5 gr. or more	443
Quinol	½ to 5 gr.	302
Quinotropine	up to 90 gr. daily	422
Rabies Antitoxin		550
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,, ,, of plants		461
,, ,, of the human body		461
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,, Changing into Helium		457
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,, Precipitate ...		294
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Resina Guaiaci		279
Resina Podophylli	1-30 to 1-15 gr. frequently ¼ to 1 gr. single dose	426
,, ,, *Indici*	¼ to 1 gr.	xxii
Resinol Ointment and Soap		425
Resinous Tinctures, to dispense		508
Resorcin	3 to 8 gr.	462
,, Ichthyol		308
,, -monacetate		463
,, -phthaleïn Anhydride		186
Restorative Beef Essence		252
Retinal Extract ...	2 dr.	567
Rhamni Frangulæ Cortex		464
,, *Purshiani Cortex*		153
Rhatany Root		336
Rhei Radix	3 to 10 gr. repeated	
Rheumatin	15 gr.	38
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Rhus Toxicodendron		464
Ricin		379
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Roberts' Albumin Test		596
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Romanowsky's Stain		600
Rosaniline Hydrochloride	½ to 4 gr.	186
Roseine	½ to 4 gr.	186
Rosenbach's Bile Test		596
Rubidii et Ammonii Bromidum	5 to 30 gr.	465
,, Bromidum	5 to 30 gr.	126, 465
,, Iodidum	5 to 20 gr.	465
Rubidium		465
Rubini's Solution of Camphor	2 to 5 m.	143
Rubus Chamæmorus		536
Rudolphi Moss		487
Rumex		465
Rumicin, Rumin	1 to 4 gr.	465
Rusot, Rasot	½ to 1 dr.	xix
Sabadilla		518
Saccharated Ferric Oxide	10 to 40 gr.	260
,, Wheat Phosphates		410
Saccharin, *syn. Glusidum*	½ to 2 gr.	466
,, Soluble	½ to 2 gr.	466
Saccharine Solution, Tubes of		271
Saccharum Lactis		533
,, Purificatum		467
Sacred Bark		153
St. John Long's Liniment		417
Safranine Test for Glucose		606
Safrole	20 to 30 m.	536
Sagapenum		536
Salacetol	10 to 30 gr.	38
Sal Alembroth		289, 292
,, Bromatum Effervescens	60 to 120 gr.	477
,, Carolinum		484
,, ,, Factitium	20 to 60 gr.	484
,, Hartini		347
,, Polychrestum	30 to 120 gr.	430
Salicifrice		470
Salicinum	5 to 20 gr.	38
Salicylamide	2 to 6 gr.	42
Salicylated Collodion		218

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Salicylic Acid Ointment, 1 in 30		34
,, ,, Cream, 1 in 6½		34
Salicyl-α-methyl-phenyl-hydrazone	4 to 8 gr.	41
,, -para-phenetidin	60 to 90 gr. daily	187
Saligallol		31
Saline Solution, Gelatin		268
,, ,, Normal		474
,, ,, Tubes of		476
Salipyrin	15 to 30 gr.	193
Salix Alba		36
,, Nigra		536
Salocoll	10 to 30 gr.	195
Salol	5 to 15 gr.	39
,, cum Camphora		41
,, Catheter Oil		41
,, Collodion		41
,, Mouth Wash		40
,, Pill Varnish		41
Salophen	10 to 30 gr.	42
Saloquinine	15 to 45 gr.	38
,, Salicylate	15 gr.	38
Salt of Tartar = Potassium Carbonate		
Salts, Anti-Catarrhal		13
,, Smelling, Carbolised		13
Salufer		482
Salvo Petrolia		394
Salzer's Pipette Method		614
Sanatogen		27
Sandal Wood Oil	5 to 30 m.	381
Sanguinaria		467
Sanguinarin	¼ to 1 gr.	467
Sanguis Bovinus Exsiccatus		253
Sanitas and Preparations		417
,, Antiseptic Pastilles		417
,, Oil		417
,, Toilet		417
Sanmetto		536
Sanose		254
Sanosin		248
Santalol		381
Santonica	10 to 60 gr.	468
Santoninoxim		469
Santoninum	2 to 5 gr.	468
Sapo Animalis		469
,, Durus		469
,, Jalapinus	2 to 6 gr.	333

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Sapo Kalinus		469
,, Lanoline		338
,, Mollis		469
,, Viridis		469
Sapones		469
Saponin		530
Sappan		xxiii
Sarcoma and Malignant Tumours		550
Sassafras Bark		xxii, 536
Sassy Bark		245
Savaresse's Capsules		382
Savon d'Hermenophyl		295
Savore		254
Saw-Palmetto		536
Saxol		396
Saxoline		394
Scammoniæ Resina	3 to 8 gr.	
Scammonin	1 to 5 gr.	332
Scammonium	5 to 10 gr.	
Scarlatina Anti-Serum		553
Scheele's Green, Pure	1-100 to 1-25 gr.	97
Schœnocaulon Officinale		518
Scilla	1 to 3 gr.	
Scopola Carniolica		536
,, Japonica		537
Scopolamine		103, 302, 536
,, Hydrobromide	1-300 to 1-100 gr.	302, 536
,, Morphine Anæsthesia		303
Scopolina Atropoides		536
Scopoline		537
Scotch Paregoric	½ to 1 dr.	383
,, Pine, or Fir		417
Scott's Dressing = *Ung. Hydrarg. Co.*		284
Sealed Tubes of Liquefied Phenol		9
Sea Wrack		267
Secale Cornutum	20 to 60 gr.	241
Secalin		510
Sections, Preparation of		623
Seidlitz Powder		485
Selenite		335
Semen Erucæ		472
,, Test		623
Senecin	2 to 5 gr.	537
Senecine, Senecio, Senecionine		537
Senna	10 to 30 gr.	470
Septicæmia, Serum, treatment of		552

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Serpent Venom		554
Serum Antidiphthericum		544
,, Antiplague, Yersin		548
,, Antipneumococcic		550
,, Antitetanus		555
,, Antistreptococcic		552
,, Horse		555
,, Iodised, De Renzi		475
Serums		540
,, Preparation of (*see* also individual diseases)		542
,, Preservation of ,, ,, ,, ,,		542
,, Trunececk's Artificial Inorganic		474
Sesame Oil		xxii
Sevum Phosphoratum		404
Shaving Cream		393
Side Chain Theory		540
Sidot's Hexagonal Blende		454
Sidonal and Tablets, 7½ gr. each	daily 80 gr.	421
,, 'New' and Tablets, 7½ gr.	30 gr.	421
Silicates of Sodium and Potassium		482
Silphion		538
Silver Leaf, sterilised		87
Silver Nitrate	¼ to ½ gr.	88
,, ,, *Mitigated*		89
,, ,, *Toughened*		89
,, *Oxide*	½ to 2 gr.	89
Simaba Cedron		537
Simaruba		537
Simulo		537
Sinalbin		472
Sinapis		472
Sinigrin		472
Sirop Dusart		22
Sleeping Sickness		557
Slippery Elm Bark		538
Smedley's Chillie Paste		161
Smelling Salts, Carbolised		13
Smilax Sarsaparilla		488
Snake Bite		554
Snakeroot, Black		172
Snakeweed		250
Snuff of Menthol		349
,, Suprarenal		571
Soap Bark		535
,, Green		469
,, Liquid Glycerin		470

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Soap, Lysoform		69
,, Mercuric Iodide		287
,, (Pura)		636
,, Solution, Ethereal		470
,, and Spirit Lotion		470
Soda Tartarata	2 to 4 dr.	
Sodæ Tartaratæ Effervescens, Pulvis		485
Sodii Arsenas	1-40 to 1-10 gr.	98
,, *Benzoas*	5 to 30 gr.	1
,, *Bicarbonas*	5 to 30 gr.	477
,, Boro-Salicylas	5 to 45 gr.	6
,, *Bromidum*	5 to 30 gr.	126, 476
,, Cacodylas	½ to 1 gr.	99
,, Carbolas		15
,, *Carbonas*	5 to 30 gr.	477
,, ,, *Exsiccatus*	3 to 10 gr.	477
,, Chloras	10 to 30 gr.	478
,, *Chloridum*	10 to 240 gr.	474
,, Cinnamas		3
,, Cinnamatis injectio	30 to 60 m.	3
,, Citras	10 to 60 gr.	479
,, *Citro-Tartras Effervescens*	1 to 2 dr.	
,, Dioxidum		300
,, Di-thio-salicylas	3 gr.	36
,, et Ammonii Phosphas		481
,, Ethylas		479
,, Ethyl-sulphas	¼ to 1 oz.	485
,, Glycerophosphas	5 to 10 gr.	26
,, Glyco-cholas		485
,, Hippuras	5 to 30 gr.	3
,, Hypobromitis Solutio		479
,, Hypochloris		479
,, *Hypophosphis*	3 to 10 gr.	406, 408
,, *Hyposulphis*	10 to 60 gr.	45
,, Iodas		324
,, *Iodidum*	5 to 20 gr.	480
,, Molybdas		44
,, *Nitris*	1 to 2 gr.	480
,, Nitroprussidum		593
,, Oleas	2 to 4 gr.	470
,, Orthonitrophenylpropiolas		605
,, Permanganas		347
,, Peroxidum		300
,, ,, in cubes		300
,, Persulphas	1 to 3 gr.	482
,, *Phenol-para-sulphonas*	5 to 15 gr.	16

NAME.	DOSE.	PAGE
Sodii Phenol-sulphoricinas		380
,, *Phosphas* ...	¼ to ½ oz. or 30 to 120 gr. repeated	481
,, ,, Acida...		481
,, ,, Effervescens	1 to 3 dr.	481
,, ,, ,,	(*Off.*) ¼ to ½ oz. or 60 to 120 gr. repeated ...	481
,, ,, Exsiccatus	10 gr. to 4 dr.	481
,, ,, Neutralis		480
,, *Salicylas*	10 to 30 gr.	35
,, ,, Effervescens	1 dr. or more	34
,, Silicas		482
,, Succinas	5 gr.	485
,, Sulphanilas...	5 to 15 gr.	183
,, *Sulphas* ...	¼ to ½ oz. or 10 to 120 gr. repeated	
,, ,, Acidus		483
,, ,, Effervescens	60 gr. or more	483
,, ,, ,,	(Off.) ¼ to ½ oz. or 60 to 120 gr. repeated ...	483
,, ,, Exsiccatus	½ to 2 dr.	483
,, Sulphethylas	¼ to 1 oz.	485
,, *Sulphis*	5 to 20 gr.	
,, *Sulphocarbolas*	5 to 15 gr.	16
,, Sulphocyanidum	5 gr.	485
,, Sulpho-Ichthyolas	10 to 30 gr. daily	307
,, Sulphoricinas		380
,, Sulphovinas	¼ to 1 oz.	485
,, Tauro-cholas	2 to 6 gr.	485
,, Telluras	⅓ to ⅔ gr.	486
,, *Thiosulphas*	10 to 60 gr.	45
,, Valerianas	1 to 5 gr.	517
,, Vanadas	1-32 gr.	538
Sodio-Magnesii Sulphas Effervescens	60 gr. or more	483
,, ,, cum Caffeina	60 gr. or more.	484
Sodium		473
,, Anhydro Methylene Citrate	30 gr.	68
,, Caffeine Iodide...	2 to 10 gr.	136
,, -Fluorescein		186
,, Orthonitrophenyl-propiolate		605
'Solubes' Aluminis	10 gr. each	74
,, Biniodide, 1 in 1 pint = 1 in 1,000 solution ...		287
,, Boric Acid	15 gr.	7
,, Boro. Saline...		7
{ Sodii Bibor, 5 gr. Sodii Chlorid., 5 gr. }		

NAME. DOSE. PAGE

'Solubes' Borax Co. 7

Sodii Bibor, 5 gr.
Sodii Chlorid., 2½ gr.
Ac. Carbolic, ½ gr.
Sodii Bicarb., 2½ gr.

,, Borax and Cocaine Co. 7

Sodii Bibor, 2 gr.
Sodii Chlorid., 6 gr.
Ac. Boric, 1 gr.
Ac. Benzoic, ¼ gr.
Menthol, 1-100 gr.
Thymol, 1-100 gr.
Cocaine Hydrochlor, 1-10 gr.

,, Cocaine Hydrochlor, 1 and 5 gr. 204
,, Eucaine, 1 and 5 gr. 211
,, ,, and Sodium Chloride 212
,, Perchloride 291

1 in a tumbler of water = 1 in 4,500.
1 in a pint ,, = 1 in 1,000.
1 in a pint ,, = 1 in 500.

,, Phenol. 5 and 20 gr. 10
,, Plumbi et Opii 385
,, Potassii Permanganatis, 5 gr. 347
,, Protargol, 4·4 gr. 92
,, Sodii Chloridum 475
,, Zinci Permanganatis, ¼ gr. 524
,, Zinc Sulphate with Alum, 10 gr. each... ... 525
,, Zinc Sulphate 525

1 produces ½ pint Red Lotion.

,, Zinc Sulphocarbolate, 2 and 10 gr. 16
Sœmnoforme 55, 57
,, Mask 55
,, Capsules 55
,, Valve 55
,, Stopper 55
Solazzi 277
Solid Oxygen 300
Soluble Glass for Bandages 482
Soluté de Digitaline Cristallisée ... ... 4 to 16 m. 236
Solutio Creosoti Composita. *Brompton Hosp.* 226
,, Hydrargyri-iodo-cacodylatis ... ... 15 m. 99
,, Phenoli 12
,, Zinci Chloridi Antiseptica 521
Solution hypodermique d'Ergotinine de Tanret 3 to 10 m. 243
,, Normal Saline, and Tubes of 474
,, *of Coal Tar* 178
,, of Ichthyol 308
,, *of Potassio-Cupric Tartrate* 602
,, ,, Mercuric Iodide 610

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Solutol		11
Solveol		11
Somatose	up to 1 oz. daily	253
,, Iron		253
,, Milk		253
Somnal	30 to 45 m.	161
Somnoform = Sœmnoforme		
Sorbus Aucuparia		537
Soxhlet's Nutrient Sugar		343
Soy Bean		537
Soya Hispida		537
Sozal		76
Sozoiodol		317
Spanish or Blistering Fly		147
Sparadrap de Thapsia		538
Sparteinæ Sulphas	¼ to 1 gr.	486
Spermin		568, 569
Sphagnol		310
,, Ointment		310
,, Soap		310
Sphagnum		486
Sphygmographic Varnish		2
Spigelia = Pinkroot, U.S.		
Spinal Cord Extract	5 to 20 m.	567
Spindle Tree Bark		249
Spinthariscope		454
Spiritus Ætheris	60 to 90 m. or 20 to 40 m. rep.	53
,, ,, *Compositus*	60 to 90 m. or 20 to 40 m. rep.	53
,, ,, *Nitrosi*	60 to 90 m. or 20 to 40 m. rep.	53, 65
,, *Ammoniæ Aromaticus*	60 to 90 m. or 20 to 40 m. repeated.	
,, ,, *Fetidus*	60 to 90 m. or 20 to 40 m. repeated.	
,, *Anisi* (1 in 10)	5 to 20 m.	
,, *Armoraciæ Compositus*	1 to 2 dr.	
,, Aurantii Compositus U.S.		239
,, *Cajuputi*, 1 in 10	5 to 20 m.	
,, *Camphoræ*, 1 in 10	5 to 20 m.	142
,, ,, Fortior	2 to 5 m.	143
,, *Chloroformi* (*Chloric Ether*)	5 to 40 m.	169
,, *Cinnamomi*, 1 in 10	5 to 20 m.	
,, Coloniensis		62
,, Creosoti	1 dr.	225
,, Glonoini	½ to 2 m.	366
,, Hydrargyri Biniodidi		286
,, *Juniperi*, 1 in 20	20 to 60 m.	
,, *Lavandulæ*, 1 in 10	5 to 20 m.	
,, *Menthæ Piperitæ*, 1 in 10	5 to 20 m.	

Name.	Dose.	Page
Spiritus Methylatus		62
,, Myrciæ		62
,, *Myristicæ*, 1 in 10	5 to 20 m.	
,, Nucis Juglandis	1 to 4 dr.	533
,, *Rectificatus*		59
,, *Rosmarini*, 1 in 10		
,, Saponatus P.G.		470
,, Saponis Alkalinus		470
,, ,, Kalinus		470
,, Sinapis, P. G. iv.		473
,, Tenuior		60, 61
,, Thymol	3 to 15 m.	505
Spleen Feeding and Extract		569
Spruce, Hemlock		535
Stains, various formulæ		601 *et seq.*
Staphisagriæ Oleum		235
,, *Unguentum*		235
Star Grass		526
Starch and Iodine Paste		323
,, Iodised	½ to 4 dr.	322
Stavesacre Ointment		235
Steapsin		387
Sterile Capsules of Distilled Water		110
Sterilised Almond Oil		80
,, Liquid Paraffin		80
,, Milk		390
,, Olive Oil		80
,, Paraffin		80
,, Silver Leaf		87

Sterules, Hypodermic (flask shaped with neck to break off), each containing:—

Aconitine Nitrate, 1-640 gr.
Apomorphine Hydrochloride, 1-10 gr.
Atropine Sulphate, 1-100 gr.
Beta-Eucaine, ¼ gr.
Cocaine Hydrochloride, 1-10, ¼ and ½ gr.
Digitalin, 1-100 gr.
Heroin Hydrochloride, 1-12 gr.
Homatropine Hydrobromide, 1-200 gr.
Hyoscine Hydrobromide, 1-100 gr.
Hyoscyamine Hydrobromide, 1-100 gr.
Morphine Sulphate, 1-8, 1-6 and ¼ gr.
Pilocarpine Nitrate, 1-10, 1-6 and ¼ gr.
Sclerotic Acid, 1-16 gr.
Strychnine Sulphate, 1-100 and 1-50 gr.

Name.	Dose.	Page
Sterules, Sterile Capsules		487
Adrenalin Chloride (Takamine), 1 in 1,000		573
Argyrol, 10 and 25 per cent.		91
Atropine Sulphate, 4 gr. to oz.		105
Atropine Sulphate, 2 gr. with Cocaine Hydrochloride, 10 gr. to oz.		105
Cocaine Hydrochloride, 10 gr. to oz.		204
Dionin, 5 per cent.		357
Euphthalmine Hydrochloride, 10 gr. to oz.		111
Fluorescein and Sodium Bicarbonate (for staining for corneal ulcers)		186
Holocaine, 1 per cent.		212
Homatropine Hydrobromide, 4 gr. to oz.		109
Homatropine Hydrobromide, 4 gr. with Cocaine Hydrochloride, 10 gr. to oz.		109
Mydrine, 10 per cent.		110
Physostigmine Sulphate, 4 gr. to oz.		412
Physostigmine Sulphate, 1 gr. with Cocaine Hydrochloride, 4 gr. to oz.		412
Pilocarpine Nitrate, 2 gr. to oz.		330
Protargol, 10 and 25 per cent.		92
Sterules, large size (tube form), 10 minims, Cocaine Hyd., 10 gr. to oz.		204
Stigmata Maidis		534
Stili Spirituosi		62
Stillingia		488
Stillingin	1 to 3 gr.	488
Stockholm Tar	2 to 10 gr.	423
Stomach Contents, Examination of		613
,, Tube		613
Stramonium		235, 429
Strontii Bromidum	5 to 30 gr.	126, 489
,, ,, Exsiccatum	4 to 24 gr.	489
,, Carbonas	5 to 30 gr.	489
,, Cinnamas	2 to 5 gr.	4
,, Glycerophosphas	3 to 8 gr.	27
,, Iodidum	5 to 20 gr.	489
,, Lactas	5 to 30 gr.	489
,, Salicylas	5 to 20 gr.	490
Strontium		488
Strophanthi Semina		490
,, Tabellæ	1 to 5	491
,, *Tinctura*	2 to 10 m.	491
Strophanthin, Strophantin	1-300 to 1-100 gr.	490
Strophanthus Hispidus		490

NAME.	DOSE.	PAGE
Strophanthus Kombé, Strophantus		490
Strychnicine		493
Strychnina, Strychnine	1-60 to 1-15 gr.	492
Strychninæ Acetas	1-60 to 1-15 gr.	493
,, Arsenas	1-60 to 1-15 gr.	493
,, Hydrobromidum	1-60 to 1-15 gr.	494
,, *Hydrochloridum*	1-60 to 1-15 gr.	494
,, Nitras	1-60 to 1-15 gr.	494
,, Phosphas Acidus	1-60 to 1-15 gr.	495
,, Sulphas	1-60 to 1-15 gr.	495
,, ,, Acidus	1-60 to 1-15 gr.	495
Styles of Boric Acid		7
Styptic Colloid		219
Stypticin	¼ to ½ gr.	363
,, Wool		363
Styracol	daily 15 gr.	230
Sublamin		283
Sublimate Disinfectant for Cholera		290
,, Wood Wool, ½ per cent.		290, 419
Succus Acalyphæ	1 to 4 dr.	xviii
,, *Adhatodæ*	1 to 4 dr.	xviii
,, Allii	10 to 30 m.	527
,, Alterans	1 to 4 dr.	488
,, Ari	1 dr.	538
,, *Belladonnæ*	5 to 15 m.	118
,, Chelidonii	10 to 60 m.	530
,, *Conii*	1 to 2 dr.	221
,, Digitalis	5 to 10 m.	235
,, Galii	1 to 2 dr.	531
,, *Hyoscyami*	½ to 1 dr.	
,, *Scoparii*	1 to 2 dr.	
,, *Taraxaci*	1 to 2 dr.	
Sucrol		467
Sucrose		467
Sugar Cane, and Estimation of		467
,, Coating of Pills		415
,, Grape		271
,, Inverted		467
,, in Urine, Tests for		602
Sulphaqua Charges		499
Sulphocarbolates		16
Sulpho-ichthyolate of Ammonium		307
Sulphonal	10 to 30 gr.	496
Sulphoricinates		380
Sulphurated Lime Depilatory		141
Sulphurous Anhydride		44

Name.	Dose.	Page
Sulphur *Præcipitatum*	20 to 60 gr.	498
,, *Sublimatum*	20 to 60 gr.	498
Sundew		531
Sunlight Treatment		449
Suppositories, Hollow		276
,, Peptonised Beef		400
,, I.C. Add.		xxiv
Suppositoria Acidi Borici, 3 gr.		7
,, ,, *Carbolici*, 1 gr.		14
,, ,, *Tannici*, 3 gr.		
,, Adrenalin	10 m.	573
,, Anusol		121
,, Atropinæ, 1-20 gr.		
,, *Belladonnæ*, 1½ gr.		118
,, ,, et Morphinæ		119
,, Bismuthi Oxychloridi, 10 gr.		122
,, ,, Salicylatis	10 gr.	123
,, ,, Subnitratis	10 gr.	124
,, Carnis		400
,, Chloral, 5 gr.		159
,, Cocainæ, ½ gr. or more		200
,, ,, ½ gr. with Morphine ½ gr.		200
,, Collinsoniæ		530
,, Conii Extract, 2 gr.		
,, cum Glycerin		276
,, Cupri Sulphatis, 2 gr.		
,, Gallæ, 5 gr.		
,, Gallæ, 5 gr. Opii, 1 gr.		
,, *Glycerini*		276
,, Hamamelin, 1 gr. and 3 gr.		282
,, Ichthyol, 3 gr. (Gelatin or Cacao Butter)		308
,, *Iodoformi*, 3 gr., also 1 gr. and 5 gr.		313
,, ,, with Eucalyptus Oil, 5 m.		
,, *Morphinæ*, ¼ gr., also ½ gr., and 1 gr., 1½ gr. and 2 gr.		355
,, Myrtilli Extracti		534
,, Opii, 1 gr.		
,, *Plumbi Acetatis*, 3 gr. *Opii*, 1 gr.		385
,, Ranunculi Ficariæ Ung.		467
,, Santonini, 3 gr., 5 gr., and 6 gr.		469
,, Supra-renal Ext. Liq.		571
,, ,, with Morphine		571
,, Zinci Oleatis 5 gr.		
,, ,, Oxidi 5 gr.		
Supra-renal Capsule Extract, Liquid	10 to 5 m.	570

NAME.	DOSE.	PAGE
Supra-renal Capsule Extract, Dry ...	... ½ to 3 gr.	571
,, Injection (Uterine) ...	... ...	571
,, Ointment	... ...	571
,, Snuff	... ...	571
,, Spray	... ...	571
,, Tabellæ (Chocolate) ...	... 1 or more	571
Supra-renalin	... ...	572
Surgical Dressings and Apparatus ...	... ...	627
,, Lubricant	... ...	12
Sweet Vernal Grass	... ...	528
Sylphium, *syn.* Silphion	... ...	538
Symphytum Officinale	... ...	537
Synopsis of Indian and Colonial Addendum	... ..	xviii
Syphilis, Serum treatment of	... ...	555, 620
Syrupus	... 1 or 2 dr.	
,, Acaciæ (Mucilage 1, Syrup 5),	... ... *ad lib.*	
,, Acidi Hydriodici, 1 per cent.	... 20 to 60 m.	323
,, Allii Aceticus	... 1 to 4 dr.	527
,, Apomorphinæ Hydrochloridi	... ½ to 1 dr.	86
,, *Aromaticus*	... ½ to 1 dr.	240
,, *Aurantii*	... ½ to 1 dr.	112
,, *Aurantii Floris*	... ½ to 1 dr.	111
,, Butyl Chloral	... 1 to 4 dr.	131
,, Calcii et Ferri Lactophosphatis	... ½ to 1 dr.	23
,, ,, *Lactophosphatis* ...	... ½ to 1 dr.	22
,, ,, Hypophosphitis ...	... 1 to 4 dr.	407
,, Cascara Sagrada	... 1 to 4 dr.	155
,, *Cascaræ Aromaticus* ...	... ½ to 2 dr.	153
,, *Chloral*...	... ½ to 2 dr.	160
,, Cocainæ...	... ... 1 dr.	204
,, *Codeinæ*	... ½ to 2 dr.	215
,, Eastonii...	... ½ to 1 dr.	264
,, ,, Liquor pro... ...	... 9 to 18 m.	264
,, Eucalypti Gummi	30 to 60 m.	249
,, Ferri Bromidi	... ½ to 1 dr.	255
,, ,, ,, cum Quinina...	... ½ to 1 dr.	255
,, ,, ,, ,, ,, et Strychnina,	1 dr.	255
,, ,, ,, ,, Strychnina	... ½ to 1 dr.	255
,, ,, et Manganesii Phosphatum ...	1 dr.	263
,, ,, ,, Quininæ Citratis ...	... 1 dr.	436
,, ,, ,, ,, Hydrobromatum...	½ to 1 dr.	255
,, ,, ,, ,, Iodidi ...	... 1 dr.	438
,, ,, ,, StrychninæHydrobromatum	½ to 1 dr.	255
,, ,, Hypophosphitis ...	... ½ to 2 dr.	408
,, ,, *Iodidi*	... ½ to 1 dr.	262
,, ,, *Phosphatis*	... ½ to 1 dr.	263

NAME.	DOSE.	PAGE
Syrupus Ferri Phosphatis Compositus	½ to 2 dr.	263
,, ,, ,, *cum Quinina et Strychnina* ('Easton Syrup')	½ to 1 dr.	264
,, ,, Quininæ et Strychninæ Hydrobromatum	½ to 1 dr.	255
,, Ficorum	1 to 4 dr.	210
,, *Glucosi*		414
,, Glycerophosphatum (Robin)	1 to 4 dr.	28
,, ,, Compositus	1 to 2 dr.	27
,, *Hemidesmi*	½ to 1 dr.	
,, Hypophosphitum Compos., B.P.C.	½ to 2 dr.	408
,, ,, ,, 'American'		409
,, ,, U.S.P.		409
,, Iodo-Tannicus	½ to 2 dr.	321
,, Ipecacuanhæ Aceticus	¼ to 2 dr.	326
,, *Limonis*	½ to 1 dr.	
,, Mori	1 dr.	
,, Papaveris	1 dr.	
,, Picis Liquidæ	1 to 2 dr.	424
,, ,, cum Codeina	½ to 2 dr.	424
,, Pini Pumilionis	1 dr.	418
,, *Pruni Virginianæ*	½ to 1 dr.	431
,, *Rhei*	½ to 2 dr.	
,, *Rhœados*	½ to 1 dr.	xxiv
,, *Rosæ*	½ to 1 dr.	
,, *Scillæ*	30 to 60 m.	
,, *Sennæ*	½ to 2 dr.	471
,, ,, cum Manna	½ to 1 dr.	472
,, Sodii Hypophosphitis	1 to 4 dr.	408
,, Sulphatum	4 dr.	141
,, *Tolutanus*	½ to 1 dr.	
,, Triplex		265
,, Trium Phosphatum		264
,, *Urgineæ*	½ to 1 dr.	xxiv
,, *Zingiberis*	½ to 1 dr.	
Syzygium Jambolanum		333
Tabellæ, Chocolate Tablets—		503
,, Apomorphinæ, 1-50 and 1-30 gr.		85
,, Bismuthi et Pepsinæ, 3 gr. each		121, 400
,, Caffeinæ Citratis, 1 gr.		135
,, Cocainæ, 1-20 gr., also 1-12, 1-10, 1-8 gr., &c.		200
,, Erythrol Nitratis, ¼, ½ and 1 gr.	1 or 2	245
,, Exalgin, ½ gr.		185
,, *Glonoini*	1 or 2	366
,, Mannitol Nitratis, 1 gr.		245

Name.	Dose.	Page
Tabellæ, Chocolate Tablets. (*Continued*)		
,, Menthol, 1-5 gr.		349
,, Nitroglycerini	1 or 2	366
,, ,, Comp.	1 or 2	367
,, Pepsinæ, 3 gr.		400
,, Strophanthi Tinct., 4 m.		491
,, Suprarenal Extract, ½ gr.		571
,, *Trinitrini*	1 or 2	367
Tablets, Compressed—499. *Chiefly in demand are:—*		
Acetanilide (Antifebrin), 3 gr.		180
,, 3 gr. with Caffeine, 1 gr.		180
Agathin, 4 gr.		41
Aloes et Myrrh = 4 gr. pill (*Off.*)		71
,, 4 gr. et Ferri Sulph. = 4 gr. pill (*Off.*)		71
Aloin, 1-10 and ½ gr.		74
,, Compound		74
,, 1-5 gr. Strychnine Sulphate, 1-60 gr. Ext. Belladonna, 1-8 gr. Ipecacuanha, 1-16 gr.		
Ammon. Bromide, 5 and 10 gr.		76
,, Chloride, 3 and 5 gr.		76
,, ,, 3 gr. and Borax, 2 gr.		77
Ammonium Chloride, 3 gr. with Liquorice Ext. 3 gr.		77
Ammonol, 5 gr.		181
Anticonstipation = Pil. Aloin Co.		74
Antifebrin, 3 gr.		180
,, 3 gr. with Caffeine, 1 gr.		180
Antipyrine (Phenazone), 2½ and 5 gr.		191
,, 3 gr. and Caffeine, 1 gr.		191
Antiseptic, Thymol, Lavender, &c.		
Apomorphine, 1-100 gr. and 1-50 gr.		85
Arsenious Acid, 1-100, 1-50, and 1-20 gr.		94
Aspirin, 5 and 8 gr.		37
Atropine Salicylate, 1-100 gr.		104
Arsenic, 1-60 gr. Iron Hypophosphite, 2 gr. Quinine Ac. Sulph. 1 gr.		96
Benzoic Acid Compound		
,, Acid, ½ gr. Menthol, 1-10 gr. Ipecacuanha, 1-10 gr. Codeine, 1-10 gr. Red Gum, ½ gr.		
Benzonaphthol, 5 gr.		360
Benzosol, 5 gr.		229
Betanaphthol, 3 gr.		359
Bismuth Carbonate, 5 gr.		120

NAME. DOSE. PAGE

Tablets, Compressed—499. (*Continued.*)

Bismuth Salicylate, 5 gr.... 123
,, Subnitrate, 5 and 10 gr. 124
,, and Pepsin, 3 gr. each... 129
,, Pepsin and Charcoal, 2 gr. each 121
Blaud's Pill, 3, 4 and 5 gr. 257
,, ,, 4 gr. with Arsen. 1-64 gr. ... 96, 257
Borax, 5 gr. ... ...
,, with Cocaine, 1-20 gr. ... ...
Boric Acid, 5 gr. 7
Caffeine, 1 gr. and Antipyrin, 3 gr. 135
,, 1 gr. and Phenacetin, 4 gr. 135
,, Citrate, 2 gr. 134
,, Hydrobromide, 2 gr. 135
Calcium Sulphide, ¼, ½ and 1 gr. 140
Calcusol 231
Camphor, ¼ gr. and Quinine Acid Sulphate, 1 gr. ... 143
,, Monobrom, 1 gr. 144
Cascara Sag. Ext. 1, 2, 3, 4, and 5 gr. (plain or sugar-coated) 155
Cerebrin, 5 gr. 567
Cerium Oxalate, 2 and 5 gr. ... ...
Chalk Aromatic Powder with Opium, 5 gr. 385
Chinosol, 5, 8 and 15 gr. 185
Chloralamide, 5 gr. 161
Chloral Hydrate, 5 and 10 gr. (*to be dissolved*) ... 160
Chologen 427
Codeine, ¼ and ½ gr. 215
,, Phosphate, ¼ gr. 215
Colocynth Comp. = 4 gr. pill (*Off.*) 71
Compound Hypophosphites 409
Didymin (Orchitic Substance), 5 gr. 569
Digitoxin, 1-250 gr. 237
Dinner 427
Diuretin, 5 gr. 504
Dover's Powder, 5 gr. 326
Ergotin, 1, 2 and 3 gr. 242
Eucaine, 1-10 gr. 212
Euonymin, 1-6, ½ gr. 250
Euquinine, 8 gr. 443
Exalgin, ½ and 1 gr. 185
Ferri Arsenas, 1-8 gr. 97
,, Carb. Sacch., 5 gr. 256
,, Quin. Citr., 3 gr. 436
Ferrum Redactum, 2 gr.... ... ...
Fersan, 0·25 and 0·5 gm. 251

Name.	Dose.	Page
Tablets, Compressed—499. (*Continued.*)		
Fluorescein, 1-250 gr.		
Formalin Disinfectant		69
Glandulen, 4 gr.		566
Glycerophosphates, Compound		27
Grey Powder, ¼, ⅓, ½, 1, 2, and 3 gr.		
,, 1 gr. and Dover's Powder. 1 gr. ...		
Guaiacol Benzoate, 5 gr.		229
,, Carbonate, 5 gr.		230
,, Helmitol, 7½ gr.		422
Guaiacum and Sulphur, 3 gr. of each		280
,, ,, 2 gr. ,, ...		
,, with Quinine Salicylate, ½ gr.		
Hedonal, 7½ gr.		516
Hetralin, 7½ gr.		422
Hopogan, 0·3 gm.		300
Hydrarg. Iodidum Flav., 1-3 gr.		287
,, ,, Rub., 1-20 gr.		286
,, ,, Vir., 1-8 gr.		287
,, Perchlor., 1-100, 1-32 and 1-10 gr.		291
,, Subchlor., 1-10, 1-6, ¼, ½, 1, 2, 3, 4 and 5 gr.		293
Ichthyol, 2½ gr.		308
Iodopyrin, 5 gr.		193
Iodothyrin, 5 gr.		575
Ipecacuanha Powder, 1-20, 1-10, ¼ and 5 gr. ...		325
Lecithin, 1-3 gr.		339
Lithium Carbonate, 5 gr.		340
,, Citrate, 5 gr.		340
Livingstone Rousers		442
Magnesium Sulphite, 5 gr.		
Manganese Dioxide, 2 gr.		345
Mercuric Ethylene-diamine (very poisonous)		283
Nitropropiol (Sugar Test)		605
Nuclein, 1 gr.		157
Nux Vomica Tinct., 5 and 10 m.		371
Opium Powder, ½ and 1 gr.		385
Orexine Tannate, 4 gr.		189
Orchitic Substance, 5 gr.		569
Ovarian Substance, 5 gr....		568
Ox Bile, keratined, 4 gr.		
Pancreatin and Soda		388
Papain, 2 and 5 gr....		391
Parotid Gland, 5 gr.		
Pelargonium Compound		535
Pepsin, 3 gr....		400
Peptonic (Pepsin, Pancreatin, Calcium Lactophosph., each 1 gr.)		

NAME. DOSE. PAGE

Tablets, Compressed—499. (*Continued.*)

Phenacetin, 4, 5 and 10 gr. 189
,, 4 gr., and Caffeine, 1 gr. 135, 189
,, 2½ gr., and Sulphonal, 2½ gr. 190
Phenalgin, 2½ gr. 182
Phenazone, *see* Antipyrin.
Phenol, ¼ and ½ gr. ... ...
Phenolphthalein, ½, 2 and 4 gr. 16
Pig Bile, keratined, 4 gr. 254
Piperidine Para-Sulphamine Benzoate, 5 gr.... ... 231
Piperazine, 5 and 15 gr. 420
Pilocarpinæ Nitratis, 1-10 and 1-6 gr.... 330
Pituitary Gland, 2 gr. ... ...
Podophyllin, 1-8, ¼, and ½ gr. 426
Potass. Bicarbonate, 5 gr. ... ...
,, Bromide, 5 and 10 gr. ... ...
,, Chlorate, 5 gr. ... ...
,, ,, 3 gr., and Ammon. Chlor. 1 gr. ...
,, ,, 3 gr., and Borax, 2 gr. ... ...
,, ,, Borax and Cocaine (Voice) ...
,, Iodide, 5 gr. 428
,, Permanganate, 1 and 2 gr. 347
Prostate Gland, 2½ gr. ... ...
Pulv. Cretæ Aromat., 5 gr. 385
Quinine Acid Sulph., ½, 1, 2, 3, 4, and 5 gr. 412
,, Hydrobromide, 3 and 5 gr. 436
,, ,, 3 gr. with Phenacetin 5 gr. 436
,, Hydrochloride, 1, 2, 3, 4, and 5 gr. 437
,, ,, Acid, 1, 3, and 5 gr. 437
,, Salicylate, 3 gr. 439
,, Sulph., 1, 2, 3, 4, & 5 gr. 441
Red Bone Marrow, 3 gr. = 1 gr. Desiccated Marrow 565
Rennet 398
Resorcin, 3 gr. 462
Rhubarb, 3 gr. ... ...
,, Compound (Gregory Powder), 5 gr. ...
,, Soda and Ginger ... .
Saccharin, ½ gr. 467
Salicin, 5 gr. 39
Salicylic Acid, 3 & 5 gr. ... ...
Salipyrin, 5 gr. 194
Salivary Gland, 5 gr. ... ...
Salol, 5 gr. 39
Santonin, 1, 2, & 3 gr. 468
Saxin (Saccharin), ¼ gr. ... ...
Sidonal, New, 7½ gr. 421

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Tablets, Compressed—499. (*Continued.*)

Soda Mint (Sod. Bicarb., Ammon. Carb., & Peppermint) ... ...
Sodium Benzoate, 2 gr. 2
„ Bicarbonate, 5 gr. ... ...
„ Bromide, 5 gr. 476
„ Chlorate and Borax 478
„ Acid Sulphate, 5 gr. 433
„ Fluorescein, $\frac{1}{250}$ gr. 186
„ Nitrite, 2½ gr. 480
„ Salicyl., 3 & 5 gr. 35
Spinal Cord, 2½ gr, ... 567
Spleen Substance, 5 gr. 570
Strontium Bromide, 5 gr. 489
Strophanthus Tinct., 2 & 5 m. 491
Stypticin, ¾ gr. 363
Sublamin (poison), 15 gr. 284
Sulphonal, 5 gr. 496
Sulphur Præcip. 5 gr., with Pot. Acid. Tart., 1 gr.... 498
Supra-renal Capsule, 5 gr. 571
Syr. Easton = ½ dr. & 1 dr. 265
Tetronal, 5 gr. 497
Theocin, 4 gr. 504
Theophylline, 4 gr. 504
Thymol Carbonate, 10 gr. 507
Thymus Gland, 3 & 5 gr. 574
Thyroid Powder, 1½ & 5 gr. 575
Thyroglandin, 2 gr. 575
Thyro-iodin, 0·3 gm. 575
Tincture of Aconite, 5 m. 47
„ „ Belladonna, 2 & 5 m. 119
„ „ Cannabis = 5 m. 145
„ „ Opium, 5 & 10 m. 386
Trional, 5 gr. 497
Uranium Nitrate, 1 gr. 513
Urethane, 5 gr. 515
Uricedin, 15 gr. 341
Urosin, 8 gr. 435
Urotropine, 3, 5, & 7½ gr. 421
„ Effervescent, 4 gr. 421
Uterine Substance, 5 gr. ... ...
Veronal, 7 gr. 515
Yohimbine Hydrochloride, 1-13 gr. 539
Zinc Oxide, 2 gr. 523
Zymine, 3 gr. ... ...

For Effervescing Compounds, see '*Vescettes.*'

NAME. DOSE. PAGE

Tablets, Hypodermic. *Chiefly in demand are:—*

Sterile Capsules of Distilled Water for dissolving, see p. 110.

Aconitine Nitrate, 1-640 gr. 49
Apomorph. Hydrochlor., 1-20, 1-15 and 1-10 gr. ... 85
Atropine Sulph., 1-200, 1-150, 1-100, 1-60 and 1-50 gr. 105
Beta-Eucaine, ¼, 1-3 and 1 gr. 212
Caffeine Sodio Salicylate, ½ gr. 136
Cocaine Hydrochlor., 1-10, 1-8, 1-6, ¼, and ½ gr. ... 203
Codeine Phosphate, ¼ gr. 215
Curare, 1-12 gr. 233
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,, Hydrochloride Acid, 1, 2 and 3 gr. 437
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,, Sulphate, 1-100, 1-60, 1-50 and 1-30 gr. ...		495
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,, 1-250 gr. with Cocaine Hydrochloride, 1-25 and 1-50 gr. of each		109
Tachiol ...		87
Taka-diastase ...	1 to 5 gr.	344
Talc ...		334
Tallquist's Hæmoglobin Scale ...		598
Tamarind ...	1 to 8 dr.	
Tannalbin ...	8 to 15 gr.	46
Tannigen ...	3 to 8 gr.	46
Tannin ...	2 to 5 gr.	46
,, Iodine Syrup ...	½ to 2 dr.	321
Tannoform ...		47
Tannopine, *syn.* Tannol ...		422
Tanocol ...	15 gr.	46
Taphosote ...	20 to 40 gr.	227
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Taxine ...	1-100 to 1-60 gr.	537
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Teinture Ethérée de Phosphore ...		402
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Terchloride of Formyl ...	1 to 5 m.	161
Terebenum ...	5 to 15 m.	500
Terebinthina Canadensis ...		537
,, Chia ...	5 to 10 gr.	502
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Terpene Hydrate, Terpine ...	2 to 6 gr.	501
Terpilenol ...		502
Terpineol ...		502
Terpinol ...	1 to 5 m.	501
,, Fluid, Mackey ...		501
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,, ,, Dry as Wound Dressing ...		557
,, ,, Intra-cerebral Injection of ...		557

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Tetra-iodo-pyrrhol, *syn.* **Iodol**	1 to 3 gr.	316
Tetramethylthionine Chloride	1 to 4 gr.	187
Tetronal	10 to 20 gr.	496
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,, **Sulphate**	3 to 5 gr.	195
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Theine	1 to 5 gr.	131
Theobroma		502
Theobromatis Oleum		502
,, **Pasta**		503
Theobromine	1 to 5 gr.	503
,, Sodio-Sodic Acetate	7½ to 15 gr.	503
Theobrominum Natrio-Salicylicum	5 to 15 gr.	503
Theocin	3 to 6 gr.	504
Theophylline	3 to 6 gr.	504
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Thermodin	5 to 15 gr.	196
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Thiol	2 to 10 gr.	310
,, **Liquidum**		310
Thionin Solution		623
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Thiosinamin		473
Thoma-Zeiss Hæmacytometer		598
Thorium		457 *et seq*
,, **Emanation in Phthisis**		460
,, **Pads**		461
Thuja		538
Thymaglycine	1 to 2 dr.	506
Thymol	½ to 2 gr.	505
,, **-Acetate of Mercury**	¾ to 1½ gr.	295
,, **Carbonate**	5 to 15 gr.	507
,, ,, Tablets of		507
,, **Solution (Volckmann's)**		506
Thymolin		506
Thymotal	5 to 15 gr.	506
Thymus Gland	3 to 10 gr.	574
Thyro-glandin	3 to 5 gr.	575
Thyroid Gland		574

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Thyroid Gland, Dry	3 to 10 gr.	575
,, Anti-Serum		576
,, *Solution*	5 to 15 m.	574
Thyroideum Siccum	3 to 10 gr.	575
Thyro-iodin		575
Tinctura Aconiti	5 to 15 m., or 2 to 5 m. repeatedly	50
,, ,, Ferocis	1 minim hourly	526
,, ,, (Fleming)	1 to 5 m.	51
,, ,, Heterophylli	10 to 60 m.	526
,, ,, (Turnbull)	1 to 5 m.	51
,, *Actææ*	30 to 60 m.	172
,, *Adhatodæ*	30 to 60 m.	xviii
,, Æsculi Hippocastani	10 m.	527
,, *Aloes*	1½ to 2 dr., or ½ to 1 dr. repeated	72
,, ,, P.G. iv. (1 to 5 S.V.R.)	5 to 15 m.	
,, ,, Composita, P. Aus. Add.	1 to 2 dr.	72
,, *Alstoniæ Constrictæ*	5 to 20 m.	xviii, 527
,, ,, *Scholaris*	½ to 1 dr.	xviii, 527
,, Ammoniæ Composita P.L.		79
,, *Androgrophidis*	½ to 1 dr.	xviii
,, Anthemis	3 to 10 m.	528
,, Anthoxanthi	2 to 6 m.	528
,, Antiperiodica	1 to 4 dr.	441
,, Apis Mellificæ	1 m. hourly	528
,, Apocyni Cannabini	5 to 60 m.	84
,, *Aristolochiæ*	½ to 1 dr.	xix
,, *Arnicæ*	½ to 1 dr.	
,, ,, *Florum*	½ to 1 dr.	xix
,, *Asafetidæ*	½ to 1 dr.	
,, Asclepiadis Cornuti	5 to 40 m.	529
,, ,, Incarnatæ	5 to 40 m.	529
,, ,, Tuberosæ	5 to 40 m.	529
,, *Aurantii*	½ to 1 dr.	112
,, ,, B.P. 1885 (dried peel)	1 to 2 dr.	112
,, *Azadirachtæ Indicæ*	½ to 1 dr.	xix
,, Baptisiæ	5 to 30 m.	529
,, *Belladonnæ*	5 to 15 m.	119
,, ,, Ætherea		119
,, *Benzoini Composita*	30 to 60 m.	72
,, ,, Simplex, B.P.C. 1 in 10		72
,, *Berberidis*	½ to 1 dr.	xix
,, Blattarum Orientalium		529
,, Blepharis	16 m.	529
,, Boldoæ	10 to 20 m.	529
,, Bryoniæ	1 to 10 m.	130
,, *Buchu*	½ to 1 dr.	

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Tinctura Cacti Grandiflori	2 to 10 m.	530
,, Calendulæ Florum	5 to 20 m.	141
,, *Calotropis*	½ to 1 dr.	xix
,, *Calumbæ*	½ to 2 dr.	
,, *Camphoræ Composita*	30 to 60 m.	386
,, *Cannabis Indicæ*	5 to 15 m.	145
,, *Cantharidis*	5 to 15 m., or 2 to 5 m. repeated	149
,, *Capsici*	5 to 15 m.	150
,, ,, Ætherea		151
,, ,, Concentrata (Turnbull)		151
,, ,, Fortior, B.P.C.	1 to 3 m.	151
,, *Cardamomi Composita*	½ to 1 dr.	
,, Carminativa	2 to 10 m.	271
,, Cascara Sagrada	10 to 60 m.	155
,, *Cascarillæ*	½ to 1 dr.	
,, Castorei	½ to 1 dr.	
,, *Catechu*	½ to 1 dr.	
,, Cedron		537
,, *Chiratæ*	½ to 1 dr.	
,, Chloroformi Composita	5 to 60 m.	169
,, ,, *et Morphinæ Composita*	5 to 15 m.	169
,, *Cimicifugæ*	30 to 60 m.	172
,, *Cinchonæ*	½ to 1 dr.	175
,, ,, *Composita*	½ to 1 dr.	175
,, *Cinnamomi*	½ to 1 dr.	
,, ,, Composita P.L.	20 to 40 m.	271
,, *Cocci*, as colouring	5 to 15 m.	
,, *Colchici Seminum*	5 to 15 m.	216
,, Collinsoniæ	½ to 2 dr.	478
,, Colocynthidis, P.G.	3 to 15 m.	
,, *Conii*	30 to 60 m.	220
,, Convallariæ	5 to 20 m.	222
,, Coronillæ	30 to 60 m.	530
,, *Coscinii*	½ to 1 dr.	xx
,, Coto	10 to 30 m.	222
,, *Croci*, as colouring	5 to 15 m.	
,, *Cubebæ*	½ to 2 dr.	232
,, *Digitalis*	5 to 15 m.	236
,, Droseræ Rotundifoliæ	5 to 10 m.	531
,, Elaterii Composita	10 to 30 m.	239
,, Ergotæ	5 to 30 m.	241
,, ,, *Ammoniata*	30 to 60 m.	244
,, Erythrophlœi	5 to 1 m.	246
,, Eucalypti Foliorum	15 to 120 m.	248
,, ,, Gummi	20 to 40 m.	249
,, Euonymi	10 to 40 m.	250

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Tinctura Euphorbiæ Piluliferæ	10 to 30 m.	250
„ Ferri Acetatis	5 to 30 m.	262
„ „ Muriatis	10 to 30 m.	258
„ „ *Perchloridi*	5 to 15 m.	257
„ „ Pomata	15 to 30 m.	262
„ *Gallæ*	½ to 2 dr.	
„ *Gelsemii*	5 to 15 m.	270
„ *Gentianæ Composita*	½ to 1 dr.	
„ Gossypii Radicis	1 dr.	279
„ Grindeliæ	1 to 2 dr.	279
„ Guaiaci, 1 in 10 (Blood Test)		597
„ „ *Ammoniata*	30 to 60 m.	
„ Guaranæ	30 to 60 m.	280
„ Gummi Rubri	20 to 40 m.	249
„ *Hamamelidis*	30 to 60 m.	282
„ *Hydrastis*	30 to 60 m.	297
„ *Hyoscyami*	30 to 60 m.	
„ Ignatiæ	3 to 20 m.	371
„ *Iodi*	2 to 5 m.	322
„ „ Ætherea		322
„ „ Decolorata		322
„ „ Oleosa		322
„ Iodinei, P.E., 1 in 16		318
„ Ipecacuanhæ	10 m.	326
„ „ et Opii	10 m.	326
„ *Jaborandi*, 1 in 5	30 to 60 m.	329
„ *Jalapæ*	30 to 60 m.	333
„ „ *Composita*	½ to 1 dr.	xxiii 333
„ *Kaladanæ*	½ to 1 dr.	xxi
„ *Kino*	30 to 60 m.	336
„ „ Non-gelatinisable		336
„ Kolæ	20 to 60 m.	134
„ Koromiko	½ to 1 dr.	533
„ *Krameriæ*	30 to 60 m.	337
„ Lachnanthis	1 to 10 m.	583
„ Laricis	20 to 30 m.	
„ *Lavandulæ Composita*	30 to 60 m.	
„ Laxativa	20 to 60 m.	155
„ *Limonis*	30 to 60 m.	
„ Lobeliæ, B.P.1885	10 to 30 m.	
C.U.D. proposes 1 in 10 Alc. 70 per cent.		
„ *Lobeliæ Ætherea*	5 to 15 m.	
„ *Lupuli*	30 to 60 m.	341
„ Lupulinæ	10 to 60 m.	341
„ Lycopodii	15 to 60 m.	342
„ Menthol Ætherea		349

NAME.	DOSE.	PAGE
Tinctura *Myrrhæ*	30 to 60 m.	
,, *Nucis Vomicæ*	5 to 15 m.	370
,, *Oliveri Corticis*	½ to 1 dr.	xxii
,, *Opii*	20 to 30 m., or 5 to 15 m. repeated	386
,, *Opii Ammoniata*	30 to 60 m.	386
,, Phosphori Composita	3 to 12 m.	405
,, Physostigmatis	5 to 15 m.	410
,, Phytolaccæ	3 to 10 m.	535
,, *Picrorhizæ*	½ to 1 dr.	xxii
,, *Podophylli*	5 to 15 m.	427
,, ,, *Indici*	5 to 15 m.	xxii
,, Podophyllin Ammoniata	10 to 20 m.	427
,, *Pruni Virginianæ*	30 to 60 m.	431
,, Pulsatillæ	1 to 5 m. increased	432
,, *Pyrethri*, 1 in 5 alc. 70 per cent.		
,, *Quassiæ*	30 to 60 m.	
,, Quebracho	30 to 60 m.	433
,, *Quillaiæ*	30 to 60 m.	536
,, *Quininæ*, 2 per cent.	30 to 60 m.	437
,, ,, *Ammoniata*, 2 per cent.	30 to 60 m.	441
,, Rhamnifrangulæ	1 to 2 dr.	464
,, *Rhei Composita*	2 to 4 dr., or ½ to 1 dr. repeated	
,, ,, Aquosa, P. Aus. Add.	1 to 2 dr.	72
,, Rhois	2 to 5 m.	464
,, Rumicis	1 to 10 m.	465
,, Sabinæ	20 to 60 m.	
,, Sanguinariæ	30 to 60 m.	468
,, *Scillæ*	5 to 15 m.	
,, Scopolæ	5 to 30 m.	536
,, Senecionis	1 to 2 dr.	537
,, *Senegæ*	30 to 60 m.	
,, *Sennæ Comp.*	2 to 4 dr., or ½ to 1 dr. repeated	471
,, ,, Leguminorum	2 to 4 dr. or ½ to 1 dr. repeated	471
,, *Serpentariæ*	30 to 60 m.	
,, Spigeliæ, U.S.		
,, *Stramonii* (leaves)	5 to 15 m.	234
,, *Strophanthi*	5 to 15 m.	491
,, *Sumbul*	30 to 60 m	
,, Thujæ	2 to 5 m.	538
,, *Tinosporæ*	½ to 1 dr.	xxiii
,, *Tolutana*	30 to 60 m.	
,, *Urgineæ*	5 to 15 m.	xxiv
,, Valerianæ, 1 in 8 Alcohol 60 per cent.	30 to 120 m.	
,, ,, *Ammoniata*	½ to 1 dr.	xxiv, 516
,, Veratri Viridis	5 to 15 m.	518

NAME.	DOSE.	PAGE
Tinctura Verbasci	20 to 60 m.	519
,, Warburgii	1 to 4 dr.	441
,, *Zingiberis*	30 to 60 m.	
,, Zingiberis Fortior, B.P.1885	5 to 20 m.	271
Tincturæ		507
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,, Non-Alcoholic		508
,, Resinous, Dispensing of		508
Tinospora		xxiii
Toddalia		xxiii
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Toluol		184
Tolypyrin	5 to 20 gr.	194
Tolysal	5 to 20 gr.	194
Tonga	1 to 2 dr.	538
Tonka or Tonquin Bean		223
Toughened Caustic		89
Toxins		540
Toxophore and Toxophile Groupings		540
Towels, Sanitary Moss		487
Tragacantha	2 to 10 gr.	509
Traumatic Balsam		72
Traumaticin		171
Traumatol, *syn.* Iodocresol.		318
Triacid Stain, Ehrlich's		601
Tribromophenol		16
,, Bismuth	5 to 20 gr.	17
Tribulus terrestris (Gokhru)		258
Trichlorbutylidene Glycol	5 to 20 gr.	130
Trichlor-Tertiary-Butyl-Alcohol		131
Trichlorethylidene Glycol	5 to 20 gr.	157
Trichloromethane	1 to 5 m.	161
Trichlorphenol		17
Triferrin	15 gr. daily divided	260
Trigemin	12 gr.	193
Tri-iodomethane	½ to 3 gr.	310
Trikresol		11
Trimethylamina	20 to 60 m. of solution	510
Trimethylaminæ Hydrochloridum	2 to 3 gr.	510
Trinitrin		365
,, *Solution of*	½ to 2 m.	366
Trinitrocellulose		217
Trional	10 to 30 gr.	497
Trioxymethylene		69
Triple Stain, Ehrlich's		601

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Trochisci (Medicated Lozenges), F. with Fruit Paste, G. with gelatin basis, *i.e.*, 'Pastils' or 'Jujubes' S. with plain sugar, R. with Rose, T. with Tolu: 512

Acidi Benzoici, ½ gr., S. and F., 1½ gr. (Stimulant Voice Lozenge), T.H. ½ gr. 1 every 4 hours 1

,, Benzoici Compositi T.H. (Benzoic Acid, Codeine, Cocaine, Ipecac, Menthol and Red Gum) ...

,, *Carbolici*, T., 1 gr., T.H. (S.) ... 4 or 5 daily 14

,, Citrici (Acid Lemon Drops) ... *ad libitum*

,, Gallic, ½ gr. S. ... ...

,, *Tannici*, F., ½ gr. and G. ... 1 frequently

,, Tannici, F. 1½ gr., T.H. 1 every 3 or 4 hours

,, Tannici et Capsici, F. ... ... 1 frequently

Aconiti, F., Tinct. ½ m. 1 every ½ hour

Althææ (Pastilles de Guimauve) ... *ad libitum*

Aluminis, S., 1 gr. ... ... 1 or 2 after meals

Ammonii Bromidi 1 gr. (G.) 76

,, Chloridi, F. 2 gr., T.H. 1 every 3 hours 77

,, ,, cum Glycyrrhiza, 3 gr. ,, 77

Ammon. Chlor. Co., T. H. (Ammon. Chlor. 1 gr., Pot. Chlor. 2 gr., Cubeb. ¼ gr.) 77

Antacidi (Sir W. Roberts)
{ Calcii Carbonatis Precipitati 3½ gr.
Magnesii Carbonatis 2½ gr.
Sodii Chloridi 1 gr. }

Antimonii Compositi Effervescentes, C.L.T.E. 1 thrice daily

Bismuthi Compositi, R., 2 gr. ... 1 or 2 after meals 124

Boracis, F., 3 gr., T.H.... 1 every 3 or 4 hours

,, et Potassii Chloratis, F. ,, ,,

Camphoræ, 2 gr., S. ... ... 1 frequently 143

Capsici, S. (and as Voice Jujubes) ... ,,

Carbonis S. (Willow Charcoal) 12 gr. 1 or 2 after meals

Carnis (Meat Lozenges) ... ... *ad libitum* 252

Cascara Ext. gr. 2½ c. Mentha Pip. F. ... 1 or 2 154

Catechu, F., 2 gr., T.H. ... 1 every 3 hours

,, S., 1 gr. ... ... ,,

Chlorodyne, 4 drops, S., B.P. '85 ... .

Cinnamon (Pink), S. ... ...

Cocainæ Hydrochloridi, S., 1-12 gr., T.H. F. 1-10... 204

Codeinæ, 1-8 gr., S. ... ... 4 or 5 daily 215

Cubebæ, F., ½ gr., T.H. 1 every 3 or 4 hours 232

Digestive (Rhubarb, Ginger, Cardamoms)... ...

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Trochisci (Medicated Lozenges), F. with Fruit Paste, G. with gelatin basis, *i.e.*, 'Pastils' or 'Jujubes,' S. with plain sugar, R. with Rose, T. with Tolu :		
Eucalypti Gummi, F., 1 gr.	1 every 3 or 4 hours	249
,, Compositi, F., 1 gr.	,, ,, ,,	249
,, Ol. 1m. G.	...	
Ferri Redacti, S., 1 gr.	1 or 2 after meals	
Gelatini	*ad libitum*	
Glycerini, G.	,, ,,	
Glycyrrhizæ	...	278
,, (et Anisi, Brompton H.)	...	278
Guaiaci, 2 gr., T.H. F., and S.	3 to 6 daily	
,, *Resinæ*, F., 3 gr.	...	
Hydrargyri Subchloridi, S., ½, 1 gr. and 2 gr.	...	
Ipecacuanhæ, F., ¼ gr., also S. B. P. '85	4 or 5 daily	327
,, S., 1 gr.	2 or 3 daily	
Kino, F., 2 gr.	1 every 3 or 4 hours	336
Krameria, 2 gr. et Cocaine 1-10 gr. G.	,, ,,	
Krameriæ, F., Ext. 1 gr., G. 2 gr., F. (T. H.) 3 gr.	1 every 3 or 4 hours	337
,, *et Cocainæ*, $\frac{1}{20}$ gr., F.	...	337
Lactucæ, F. & S., Ext., 1 gr.,	1 every 1 or 2 hours	
Lavandulæ, S.	*ad libitum*	
Magnesiæ, 5 gr., S.	2 to 4 daily	
Malvæ, S.	*ad libitum*	
Menthæ Piperitæ	,, ,,	
,, ,, Fortiores	,, ,,	
Menthol, S., ¼ gr., G., 1-20, 1-10, 1-6, ¼ gr.	...	
Menthol, 1-20, and Cocaine, 1-20 gr., G.		
,, ¼, and Eucalyptus, 1 m., G.		
Morphinæ, T., 1-36 gr.	4 or 5 daily	355
,, 1-36 gr., *et Ipecacuanhæ*, 1-12 gr., T.	4 or 5 daily	327, 355
Morphinæ 1-40 gr., & Emetin, 1-80 gr., S.	,, ,, ,,	327
Moschi, S.	*ad libitum*	
Nitroglycerini, *vide* Tabellæ.		
Opii S., Ext. 1-10 gr. (and Liquorice),	2 to 6 daily	386
Orthoform, 2 gr., T. H.	...	
Papain, ½ gr., S.	...	391
,, 1-5 gr., cum Cocaina, 1-10 gr., S.	...	391
Paregoric, S.	2 to 6 daily	
Potassii Chloratis, R., 3 gr.	3 to 6 daily	
,, Chloratis, F., 3 gr., T.H.	3 ,, 6 ,,	
,, ,, et Boracis, 1½ gr. each, T.H.		
,, Citratis, F., 3 gr.,	3 to 6 daily	

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Trochisci—		
Potassii et Glycerin, G , gr....	1 every 3 hours	
,, Nitratis, S., 3 gr.	3 to 6 daily	
,, Tartratis Acidi, F., 3 gr.	3 to 6 ,,	
Pyrethri, F., 1 gr.	3 to 6 ,,	
Rhei, Zingiberis et Cardamomi (Digestive Tablets)	1 or 2 after meals	
Ribis Nigri (Fruit Lozenges)...	*ad libitum*	
Rosæ, S.	,, ,,	
Santonini, S., 1 gr.	1 or 2 at bedtime	469
Sedativi, F., Ext. Opii, 1-10 gr., T.H.	3 to 6 daily	388
Sodii Bicarbonatis, R., 3 gr.	1 or 2 after meals	
Sodii et Zingiberis, S. ...	1 or 2 after meals	
,, Chloratis, S., 3 gr.	3 to 6 daily	478
Sulphuris, 5 gr. ...	1 to 6 ,,	498
Terebene, 1 m , S.		
Tolutani S.	*ad libitum*	
Tussis		327
,, Brompton Hosp. (Liquorice and Aniseed)...		278
Zingiberis, S.	*ad libitum*	
Tropacocaine		209
,, Anæsthesia		209
Tropæoline OO ...		615
Tropic Acid		103
Tropine ...		103
Tropon		254
Trunececk's Inorganic Serum...		474
Truxilline ...		199, 202
Trypanosomiasis ...		557
Trypsin		387, 390
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Tubercle Bacillus		619
Tuberculin, Old ...		558
,, Sterile Dilutions ...		558
Tuberculinum Kochii, P.G. iv. and Tuberculin O.		560
,, ,, Sterile Dilutions		560
Tuberculous, Anti-Serum Marmorek		561
Tubes, Glass of Ethyl Chloride (Anestile, Kelene)		56
,, ,, Glucose		271
,, ,, Phenol ...		11
,, ,, Saline Gelatin Solution		268
,, ,, Saline Solution		476
Tulip Extract ...		538
Tumenol ...		310
Turf Moss		486

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Turck's Capsules and Aspirator Bottle		614
Turnbull's Tincture of Aconite	1 to 5 m.	51
Turner's Cerate		335
Turpentine, Oil of	10 m. to 4 dr.	417
,, French Oil	30 m. every ½ hour	401
,, Venice		419
Turpeth or Turbith Root	5 to 20 gr.	xxiii
Turpethum	5 to 20 gr.	xxiii
Turtle Jelly		252
,, Soup		252
Tussol	5 to 15 gr.	194
Tylophoræ Folia	¼ to 2 gr.	xxiii
Typhoid Bacillus		620
,, Fever, Widal Test for		620
,, Serum		561
,, Anti-Extract, Jez		562
Tyrosin		597
Tyrotoxicon		431
Uffelman's Test for Lactic Acid		615
Ulexine	1-20 to 1-5 gr.	531
Ulmaren		34
,, Capsules, 8 minims		34
Ulmus Campastris and U. Fulva		538
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,, ,, *Borici*, 1 in 10		7
,, ,, *Carbolici*, 4 per cent.		14
,, ,, ,, Compositum V. C. H.		289
,, ,, Pheno-borici		8
,, ,, Pyrogallici, 60 gr. to 1 oz.		30
,, ,, ,, Compositum		30
,, ,, *Salicylici*, 2 per cent.		34
,, *Aconitinæ*, 2 per cent.		49
,, Adipis Lanæ, P.G. iv.		338
,, *Aquæ Rosæ*		381
,, Araroba		171
,, *Atropinæ*, 2 per cent.		106, 107
,, ,, cum Acido Borico		107
,, ,, cum Cocaina		107
,, *Belladonnæ*		119
,, Beta-Naphthol Compositum		359
,, Bismuthi Oxychloridi, 1 to 1		122
,, Cadmii Iodidi, 1 in 8		
,, Calaminæ		336
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,, *Capsici*, 1 in 5 151
,, Capsici Oleo-resinæ 150
,, *Cetacei*, 1 in 5 ... ...
,, *Chrysarobini*, 1 in 25 170
,, ,, Compositum 170
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,, Creosoti Forte, 2 parts in 3 225
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,, Cupri Oleatis 372
,, Diachyli 375
,, ,, Carbolisatum 375
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,, *Gallæ*, 1 in 5 ... ...
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,, ,, et Zinci Cyanidi, 1 or 2 per cent. 285
,, ,, *Iodidi Rubri*, 1 in 25 ... ...
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,, ,, ,, ,, ,, Physostigmina 412
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,, ,, cum Atropina	...	107
,, ,, et Eucalypti, 1 in 50	...	314
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,, Ipecac. et Crotonis	...	327
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,, Lanolini	...	338
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,, *Myrobalani*	...	xxii
,, ,, *cum Opio*	...	xxii
,, Napthol Compositum	...	359
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,, Olei Cadini, 1 in 2	...	425
,, Oleo-resinæ Capsici	...	150
,, *Paraffini*	...	395
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,, Pilocarpinæ	...	331
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,, ,, *Carbonatis*, 1 in 10 Paraffin Ointment		
,, ,, *Iodidi*, 1 in 10 Paraffin Ointment ...		
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,, Sulfuratum, P.Aus.Add.	...	499
,, *Sulphuris*, 1 in 10	...	
,, Sulphuris cum Hydrargyro	...	499
,, ,, Hypochloritis	...	499

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,, Supra-renal Extract		571
,, Thymol		506
,, Vaselini Plumbicum		375
,, *Veratrinæ*, 2 per cent.		519
,, *Zinci*, 15 per cent.		523
,, ,, Compositum		274
,, ,, cum Acido Salicylico		523
,, ,, *Oleatis*		375
,, ,, Permanganatis		524
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Units of Immunity, Antitoxin		546
Unna's Alcohol Pencils		62
,, Jelly		509
,, Paste		523
,, Pyrogallol Ointment		30
Upas Tree		528
Uralium, *syn.* Ural	15 to 45 gr.	516
Uranii Nitras	½ to 5 gr.	513
Uranii et Quininæ Chloridum	3 to 6 gr.	513
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,, Nitrate Solution		607
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,, Quinine	5 to 15 gr.	438
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,, Blood in		597
,, β-oxybutyric Acid in		593
,, Cholesterin in		597
,, Creatinine in		602
,, Diacetic Acid in		593
,, Glucose tests (*see also devisers' names*)		602
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,, Indican in		607
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,, Urea in, estimation of		608
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Urobilin		597
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,, Benzoic and Salicylic		505
Urosin Tablets	8 gr.	435
Urotropine	5 to 15 gr.	421
,, Quinate	up to 90 gr.	422
Ursal	10 to 30 gr.	515
Ustilago Maidis		534
Uterine Points		525
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Vaccine, Glycerinated Calf Lymph		562
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Valsol		397
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,, Coninæ		221
,, Creosoti		226
,, Cubebæ cum Limone		232
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,, Iodi Ætherealis		324
,, Olei Pini Sylvestris		418
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,, Thymol		506
Vaseline		393
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,, Cocainæ, 1 to 10 per cent.		201
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Venice Turpentine		419
Veratri Viridis Rhizoma	1 to 5 gr.	518
Veratrina	1-70 to 1-16 gr.	518
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Veratroidine		518
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'Vescettes,' Effervescent Salts Compressed—		
Caffeine Citrate	2½ gr.	134
,, Base	3 gr.	134
Carlsbad Salt		484
Lithium Citrate	5 gr.	340
Magnesium Sulphate = 30 gr. of the Salt		343
Piperazine	5 gr.	420
Potassium Chlorate	3 gr.	
,, Citrate	15 gr.	428
Sodio-Magnesian Sulphate		484
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,, Salicylate	5 gr.	36
,, Sulphate = 30 gr. of the Salt.		
Strontii Bromidum, 10 gr.		489
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Vienna Paste		427, 479
Vinca Major		539
Vin de Quinquina	1 to 4 dr.	175
Vinum Aloes	1 to 2 dr.	
,, *Antimoniale*, 1 in 220, 10 to 30 m. ; emetic 2 to 4 dr.		
,, Aurantii Detannatum		112
,, Caffeæ Viridis	1 to 2 oz.	133
,, Cascaræ	½ to 1 oz.	155

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Vinum Chinæ	1 to 4 dr.	176
,, ,, ferratum		176
,, Cocæ	1 to 4 dr.	197
,, *Colchici*	10 to 30 m.	216
,, Condurango	½ to 1 oz.	220
,, Emetinæ	5 to 40 m.	327
,, *Ferri*	1 to 4 dr.	
,, *Ferri Citratis*	1 to 4 dr.	
,, Glycerophosphatum	½ to 2 oz.	28
,, Hypophosphitum Compositum	1 dr.	409
,, *Ipecacuanhæ*	10 to 30 m. expectorant 4 to 6 dr. emetic	326
,, Kolæ		134
,, Opii	10 to 30 m.	387
,, Pepsinæ	1 to 2 dr.	400
,, *Quininæ*	4 to 8 dr.	437
,, Rhamni Purshiani	1 to 3 dr.	154
,, Rhei, B.P. 1885	1 to 2 dr.	
,, Xericum Detannatum, B.P.C. Gelatin 1 in 640		
Viola odorata	30 to 60 gr.	539
,, Tricolor	10 to 60 gr.	539
Violin		539
Virginian Prune		80, 430
Virol		566
Viscinum Aucuparium depuratum		539
Viscum Album, Viscin		539
Vitali's Reaction		104
,, Bile Reaction		597
Vitellin		90
Vitis Alba		130
Vleminckx' Solution		140
Voice Tablets		478
Volckmann's Solution of Thymol		506
Wahoo Bark		249
Warburg's Fever Tincture	1 to 4 dr.	441
Water, Ammonia free		610
,, Analysis		609
,, Gas		611
,, Glass		482
Wattle Bark		xviii
Wax, Aseptic		34
,, Carnauba		643
,, Japan		642
Weights and Measures, Metrical		x
Wheat Phosphates, Saccharated		410
White Agaric	10 to 30 gr.	527
White Quebracho Bark		433

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Whitehead's Varnish		313
Whortleberry		534
Widal's Reaction		620
Wild Cherry Bark		430
Willemite		455, 458
Willow, Black or Pussy		536
Wine of Cinchona	1 to 4 dr.	176
,, of Coca	¼ to ½ oz.	197
,, of Iron Glycerophosphate		26
Witch Hazel		281
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Wood Naphtha		62
,, Oil	½ to 2 dr.	114
,, Wool		290, 419
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,, ,, Gonorrhœa Bags		419
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,, ,, Vaccination Pads		419
,, ,, Wadding		419
Wool, Absorbent		278
Wool Fat		337
Wourara, *syn.* Wourali	1-20 to ½ gr.	232
Wundstäbchen		313
Wrack, Bladder		267
Xeroform	5 to 20 gr.	16
Xylol		184
,, -balsam		538
X. L. All Vaporizer		365
'X' Rays		444
,, Developers		445
,, Diagnosis		446
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,, Exposures		445
,, Localiser		446
,, Treatment		447
,, Tubes		444
Yeast	½ to 1 oz.	156
,, Extracts		156, 251
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,, Mercuric Iodide		286
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'Yersine' Plague Serum		548, 549
Yew		537
Yohimbine Hydrochloride		539
Zambeletti's Fluid	5 to 10 m.	98
Ziehl-Neelsen's Stain		619
Zinc, Arsenic free		520
,, Chloride Solution		521
,, Cream		523
,, Gelatin		523
,, Sulphite Gauze		525
,, and Starch Powder		335
,, Varnish		524
Zinci Acetas	1 to 2 gr.	520
,, Boras		520
,, Bromidum	3 to 10 gr.	126, 520
,, *Chloridum*		520
,, Citras	3 to 12 gr.	522
,, Cyanidum	$\frac{1}{10}$ to 1 gr.	522
,, Lactas	3 to 30 gr.	522
,, Nitras		523
,, *Oleatum*		375
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,, *Oxidum*	3 to 10 gr.	523
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,, *Phenol-para-sulphonas*		16
,, Phosphidum	1-20 to 1-3 gr.	406
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,, *Sulphas*	1 to 3 gr. tonic 10 to 30 gr. emetic	524
,, ,, Uterine Points		525
,, Sulphatis Lotio Rubra		525
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,, Sulphis		525
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,, et Potassii Cyanidum	1-10 to 1 gr.	522
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Zittmann's Decoctions, Strong and Weak LL		
,, Pill, *v.p.*736.		
Zymin	1 teaspoonful	156
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THERAPEUTIC INDEX
OF
DISEASES AND SYMPTOMS.

LIBRARY

N.B.—Internal Remedies are in Roman type. *Those for local or external use are in italics.*

Abortion, Threatened.—Codeina, Hydrastis, Morphina, Opium, Sumbul, Viburnum prunifolium.

Acne. — Cassia Beareana, Calx Sulphurata, Guaiacol, Hypophosphites, Liquor Auri et Arsenii Bromidi, Liquor Auri et Hydrarg. Bromidi, Potassii Bromid., Quininæ et Ferri Citras, Sodii Bromid., Sulphur, Sulphur Tablets, Viola tricolor, Yeast.

Acid. Lactic, Acid. Nitric. stabs., Calaminæ Lotio, Chielin, Hydrarg. Perchlorid. Lotio, Ichthyol, Ichthyol-resorcin and Salicylate, Sulphur. Hypochloritis Ung., Sulphur Iodid. Ung., Thymol Ung.

Acne Rosacea.—*Finsen Light and 'X' rays.*

Actinomycosis.—Potassii Iodid.

Argent Colloidale, Iodi Injectio, Sol. Argent. Nit. 20% *Injectio, 'X' Rays.*

Adenoids.—Cod Liver Oil, Iodine, Iron.

Ammon. Chlor. Snuff, Glycerin, Liquor Ferri Perchlor., Nasal Injection of Tannic Acid.

Ague.—Acid. Salicylic and Salicin, Aristochin, Arsenic, Berberina, Chinolinum, Cinchonidinæ Sulphas, Cinchonina, Eucalyptus Globulus, Hydrastis, Livingston Rousers, Methylene Blue, Phenalgin, Piperina, Quinetum, Quinidinæ Sulph., Quininæ Sulph. and Hydrobrom., Salicylates, Saloquinin, Simaba Cedron, Sodii Hyposulph., Urea, Warburg's Tincture.

Albuminuria.—Acid. Gallic., Fuchsine, Jaborandi and Pilocarpine, Nitroglycerin, Nitrites of Amyl and Sodium, Ozonic Ether, Strontii Lactas.

Alcoholism.—Arsenic, Atropina, Auri Chlorid., Cactus, Capsicum, Chloral Hydras, Cinchona rubra, Hydrastis, Hyoscinæ Hydrobromidum, Lupulin, Nux Vomica, Phosphorus, Picrotoxin, Quinine preps., Strychnine.

Alopecia.—Arsenic, Iron, Pilocarpine, Strychnine.

Ammon. Liquor, Cantharides preps., Hydrargyri Oleas, Lin. Iodi, Lotio Acid. Lactic, Lotio Resorcini, Oxygen, Petroleum Spirit, Pilocarpine Nitrate Lotion.

Amenorrhœa.—Actæa and Cimicifugin, Aloes, Apiol, Caulophyllin, Ergota, Ergot et Apiol, Gossypii Rad. Cortex, Iron Salts, Manganesii Oxidum, Phosphas and Sulphas Menyanthes, Potass. Permang., Pulsatilla, Senecio.

Anæmia.—Alginoid Iron, Arsenic, Arsen-Hæmol, Bromo-Hæmol, Cacodylates, Calcii and Ferri Glycerophosphas, Calcii Hypophosph., Calcii Phosph., Capsulæ Cruoris, Ferratin, Ferri Bromid., Ferri Chloroxid. Liquor, Ferri Hypophosph., Ferri Perchlorid., Ferri Phosph., Ferri Sulph., Ferrum Dialysat., Hydrogen Peroxide, Levico Water, mild and strong, Liquor Ferri Albuminati, Liquor Ferri Peptonati, Liquor Ferro-Manganesii Peptonati, Magnesii Peroxidum, Maltolivine, Manganese Citrate, Marrubin, Phosphorus, Pil. Ferri Carb. (Blaud), and Pil. Ferri Sulph., Quinine preps., Quinin et Ferri Chlor., Sodii Hypophosphis, Somatose, Syrupus Trium Phosphatum, Tinctura Ferri Pomata.

Anæsthetics by inhalation.—A.C.E., Æther, Æthyl Bromid., Æthyl Chlorid., Æthyl Iodid., Chloroform, Anestile, Somnoform, Ethyl Chloride with Nitrous Oxide (combined), Methylene, Nitrous Oxide Gas.
Morphine and Scopolamine Infiltration.

Anæsthetics, Local.—*Æther, Acid. Carbolic., Anestile, Anæsthesine, Boldo, Cocaine, Eucaine, Erythrophlœinæ Hydrochloridum, Æthyl Chlorid., Eucaine, Holocaine, Ice, Menthol, Methyl Chloride, Orthoform, "New" Orthoform, Nirvanin, Tropacocaine,* and *Tropococaine Infiltration* and *Spinal Injection.*

Ankylostomiasis (caused by Ankylostomum duodenale).—Thymol, Thymol Carbonate, Pelletierin, Podophyllin.

Aneurism.—Aconite, Amyl Nitris (?), Digitalis, Ergotina, Nitroglycerin (?), Potassii Iodidum, Veratrum.
Gelatin Injection.

Angina Pectoris.—Æther, Æthyl Iodid., Amyl Nitris, Barium Chloride, Erythrol Nitrate tablets, Iso-butyl Nitris, Mannitol Nitrate tablets, Morphinæ inj. hypod., Nitroglycerini Liquor and Tabellæ, Sodii Nitris, Theobromine, Theobromine Sodium Salicylate.
Carbonic Snow externally.

Anthelmintics.—See **Parasites, Intestinal.**

Antidotes referred to in the text; see list of *Emetics.*

To *Acid. Carbolic and its homologues*—Albumen Ovi, Alcohol, Amyl Nitris, Apomorphine, Caffeine, Calcii Saccharas, Magnes. Sulph., Olea, Oleum Camphoratum, Sodii Sulphas, Turpentine.

To *Acids, Mineral*—Alkalis, Ammonia, Calc. Saccharas, Chalk, Lime Water, Magnesia, Milk, Morphine, Potass. Bicarb., Sal Volatile, Soap and Water, Sodii Bicarb.

To *Aconite* and *Aconitine*—Amyl Nitris, Atropina, Belladonnæ Tinct., Digitalis Tinct.

To *Alkalis, Caustic*—Acid. Acetic., Acid. Citric., Acid. Tartaric, Demulcents, Gruel, Lemon or Orange Juice, Milk, Morphine, Olive Oil, Vinegar, White of Egg.

To *Arsenic*—Antidotum Arsenici, Liquor Ferri Dialysati, Magnesia.

To *Atropine* and *Belladonna*, *Hyoscyamine* and *Hyoscine*—Caffeina, Chloral, Jaborandi Tinct., Pilocarpina, Tannin, Tea.

To *Chloral*—Amyl Nitris, Coffee, Electricity, Oxygen, Picrotoxin, Strychnine.

To *Chloroform narcosis*—Amyl Nitris inhaled, Æther, Atropina or Strychnina by hypod. injection.

To *Cocaine*—Æther, Ammonia, Amyl Nitris, Chlorform.

To *Digitalis*—Acid. Gallic., Acid. Tannic., Æther, Coffee, Tea, Nitroglycerin, Spirit Camphor, Alcoholic drinks.

To *Formalin*—Ammonia, Sal Volatile, Alkaline drinks.

To *Fungus* Poisoning, *Mushrooms*, &c.—Atropine solutions, Belladonna Tincture, Sal Volatiel.

To *Gelsemium*—Amyl Nitris, Atropina, Nitroglycerini Liquor and Tabellæ, Strychninæ Liquor.

To *Hydrocyanic Acid*—Æther, Ammonia, Atropina, Hydrogen Peroxide, Liquor Ferri Dialysatus.

To *Hyoscine* and *Hyoscyamine*—as Atropine.

To *Iodine*, *Iodoform* and *Iodides*—Starch, Saccharated Sol. of Lime, Demulcents, Stimulants, and Opiates.

To *Lead* Poisoning—Atropine, dilute Sulphuric Acid and Magnes. Sulphate, White of Egg, Demulcents.

To *Mercuric Chloride*—Apomorphinæ inj. hyp., Æther, Albumen Ovi, Milk, Opium, Stimulants.

To *Morphine* and *Opium*—Ammonia, Amyl Nitris, Atropina, Caffeina, Nitroglycerini Liq. and Tabellæ, Pilocarpina, Picrotoxinum, Potass. Permanganas, Strychnine.

To *Mushrooms*. See *Fungus*.

To *Nitroglycerin*—Atropina, Bellad. Tinct., Ergota, Strychnina.

To *Oxalic Acid*—Apomorphinæ inj. hyp., Calcii Saccharas, Chalk, Castor Oil, Stimulants.

To *Phosphorus*—French Oil of Turpentine, Magnes. Sulph., Hydrogen Peroxide solution, Potass. Permanganas.

To Physostigmine.—Emetics, Tannin, Atropine or Belladonna, Chloral, Strychnine.

To *Picrotoxin*—Chloral Hydras., Potass. Bromidum.

To *Pilocarpine*—Acid. Tannic or Gallic, Atropina, Bellad. Tinct., Sal Volatile.

To Ptomaines.—Emetics, Castor Oil, Stimulants, Atropine hypodermically.

To *Silver Nitrate*—Apomorphinæ inj. hyp., Demulcents, Sodii Chloridum.

To Strophanthus.—Emetics, Stimulants, Caffeine, Amyl Nitrite, Cathartics, Anæsthetics to relax spasm, or Chloral.

To *Strychnine*—Æther, Amyl Nitris, Chloral Hydrate, Chloroform or Ether inhaled, Paraldehyde, Potass. Bromidum, Permanganates.

To Zinc Salts.—Emetics, Milk, Morphine, Potass. or Sodii Bicarb., Tannin, Tea.

Antiseptics.—See **Wounds**.

Antiseptics, Intestinal.—Acid. Boric, Acid. Carbolic, Benzonaphthol, Bismuth Salicylate, Bismutose, Ichthyol, Ichthoform, Mercurials, Myrtillus, Naphthalene, Naphthol, Phenol-Bismuth, Quinine Salicylate, Salacetol, Salol, Sulphocarbolates.

Antiseptics, Urinary. — Benzoic and Boric Acids, Salol, Hexamethylenetetramine, see also Cystitis.

Aphthæ. — Bismuth preparations, Potass. Chloras, Mineral Acids, Quinine preps., Sodii Chloras., Iodoform, Pastils.

Acid. Boric, Acid. Sulphuros, Alumen, Borax, and Glyc. of, Iodol, Lotio Nigra et Glycerini, part. æq., Potass. Permang., Sodii Chlorinat. Liquor.

Appendicitis. — Combined use of Belladonna and Salicylates (*see* p. 119.)

Asthma.—Æthyl Iodid., Ammon. Brom., Amyl Nitris, Anilin Sulphate, Antimony, Arsenic, Belladonna, Caffeine, Cannabis, Cannabin Tannas, Chloral Hydras, Chloroform, Coca and Cocaine Salicylas, Codeine, Euphorbia pilulifera, Grindelia, Hyoscine, Isobutyl Nitris, Jaborandi, Lobeliæ Tinct. and Tinct. Ætherea, Nitroglycerin, Pilocarpine, Potass. Iodidum, Pyramidon, Quebracho, Sodii Nitris, Stramonium.

Acid. Sulphuros. Vapor, Ammonii Bromidi Vapor, Arsenical Cigarettes, Chloroform Vapor, Coca or Eucalyptus leaves smoked, Cubeb Cigarettes, Himrod's Cure by fumes, Potass. Nit. fumes, Pulvis Lobeliæ Co., Pyridine, Stramonium fumes, Tobacco fumes.

Bed Sores.—*Acid. Tannic. Glycerin, Alcohol, Argent. Nit. in Nitrous Ether solution, Brandy, Glycerin, Iodoform, Gossyp. and Ung., Peruv. Bals., Tannin, Iodoform and Starch Powder, Resorcin.*

Bile, Deficiency of.—Bismuth and Opium, Hepatic Stimulants and Antiseptics, *e.g.*, Salol, Hydrarg. cum Cretâ, Pancreated Milk, Sodii Glycocholas, Sodii Phosph. Efferves., Sodii Sulph. Efferves., Sodii Salicylas, Taraxacum.

Biliousness (Excess of Bile).—Calomel, Euonymin, Iridin, Juglandin, Leptandrin, Podophyllin, Sanguinarin, Seidlitz Powders, Sodii Phosph. Efferves., Sodii Sulph. Efferves., Sodio-Magnes. Sulph. Efferves.

Bites and Stings (Serpents').—Calmette's Anti-Venomous Serum, Strychninæ inject. hypod., Tinct. Ammon. Comp., Mistura Balsamica.

Alcohol, Ammon. Liquor, Arnicæ Tinct., Chloroform, Chloral cum Camphora, Cocainæ Hydroch, Liquor, Onion Juice, Sodii Bicarb., Thymol Ung.—(For Serpent's Venom), *Potass. Permang.*

Boils and Carbuncles. — Alkalis, Arsenic, Calx Sulphurata, Ferri Perchlorid., Hypophosphites, Levurine, Levuretin, Furunculin, Nuclein, Pilulæ Sulphatum, Sulphides, Sulphurous Waters, Syr. Sulphatum, Yeast, Zymin.

Argent. Nit., Belladonnæ Glycerin (as pigment and on poultices), *Carbolated Camphor, Collodium, Fermenti Cataplasma, Opii Ext., Linimentum Atropinæ, Sphagnol.*

Brain, Softening of.—Bromides, Digitalis, Diuretics, Hypophosphites, Iron Salts, Morrhuæ Ol., Phosphorus.

Breast, Inflammation of.—All Antipyretics. Belladonnæ Ext. Glycerin. and Linim., Phytolacca.

Breath, Fetid.—*Acid. Salicylic., Calcii Permang., Camphora, Creosoti Vapor, Lysoform Mouth-Wash, Myrrh with Borax Tincture, Sanitas (Toilet), Thymaglycin.*

Bright's Disease.—Alkalis, Antipyrine, Auri Chlorid., Cannabis, Digitalis, Diuretin, Elaterium, Hydrastis, Iodo-Caffeine, Iodo-Theobromine, Jaborandi and Pilocarpine, Nitroglycerin, Potass. Iodid., Scoparii Succus.

Bronchitis, Acute.—Aconite, Ammon. Acet. Liquor, Antimony, Apocodeinæ Hydrochlorid., Codeia Jelly, Glycaphorm, Ipecacuanha, Oxygen, Squill preparations.

Vapor Benzoin, Camphor or Eucalyptus, Counter Irritation.

Bronchitis, Chronic.—Allium preps., Ammon. Carb., Ammon. Chlorid., Apomorph. Hydrochl., Benzoates and Benzoin. Tinct., Dionin, Eucalyptus Globulus, Grindelia, Heroin, Hypnal, Morphine preps., Morrhuæ Ol., Piscidia, Prunus Virginiana, Pulsatilla, Scilla, Senega, Syrup. Picis cum Codeina, Syrupus Picis Liquidæ, Tar, Terebenum purum, Terpin Hydrate, Terpinol, Tolu Balsam.

Vapores.—Acid. Carbolic., Acid. Sulphuros, Benzoini, Camphoræ, Creosoti, Cyllin, Terebeni, Iodi; Croton Linim., Iodi Linim.

Bruises.—*Arnicæ Tinct. (well diluted), Calendula, Hamamelis, Hazeline, Hydrastis Tinctura., Lot. Plumbi et Opii.*

Burns and Scalds.—*Acid. Boric Ung., Acid. Picric and Wool, Actol, Airol, Aristol, Calamin. Cerat., Chartazinc, Cocainæ Ceratum, Dermatol, Epidermin, Europhen, Glyceritum Vitelli, Ichthyol, Iodoform, Itrol, Lanolin, Lini. Ol. cum Aqua Calcis, Mollin, Sanoform, Thymol. Ung., Vaseline, Zinci Oleat. Ung., Zinci Ung.*

Bubo.—*Chlori Aqua, Hydrarg. Oleat., and cum Morphina, Hydrarg. Ung., Hydrogen. Peroxid.*

Calculi, Biliary.—Alkalis, Ox Bile, Oleic Acid, Sodii Bicarb., Sodii Glycocholas, Sodii Oleas, Soap.

Calculi, Urinary.—Alkaline Carbonates, Ammon. Benz. and Phosph., Aqua destillata, Calcis Aqua, Lithium preps., Mineral Acids (for Phosphatic), Pichi, Piperazina, Potass. Citras, Sodii Benz. and Hippuras, Triticum, Uricedin.

Cancer.—Arsenic preps., Calx Sulphurata, Chelidonium, Chloral Hydras and Opium preps. (as sedatives), Condurango, Mist. Tereb. Chiæ., Terebinth. Chia.

Acid. Arsenious, Acid. Carbolic. (caustic), Acid. Carbolic. Glycerin., Acid. Chromic., Acid. Nitric Fumans, Acid. Sulph. Fumans, Acid. Salicylic. cum Oleo, Anæsthesin, Nectrianin, Auramine, Bromum cum Acid. Oleic., Coley's fluid, Finsen Light, Hydrarg. Nit. Acid. Liquor, Iodoform, Liquor Acido-Chromo-Aceto-Osmic, Local application of Arsenic (Truneceek), London Paste, Methyl Violet, Michel's Paste, Morphine, Morphinæ Oleat., Pyoktanin, Quininæ Hydrochloridi Injectio, Quininæ Salicylas, Radium, Resorcin, Vienna Paste, Viola Odorota, 'X' Rays, Zinci Chlorid. and Paste.

Cardiac Tonics—Adonidin, Adonis Vernalis, Barii Chloridum, Caffeina, Carpaine, Convallaria, Coronillæ Extractum, Digitalis, Erythrophlœum, Oxysparteinæ Hydrochloridum, Scilla, Sparteinæ Sulphas, Strophanthus, Strychnina, Veratrum Viride, Uropherin.

Caries.—Calcii Chlorid., Calcii Hypophosph., Calcii Phosph. Hæmol, Saccharated Wheat Phosphates.

Caries, Dental.—Calcii Sulphidum.
Arsenical Paste, Lanolin and Cocaine, Paramonochlorphenol, Salol or Lysoform Mouth Wash.

Catarrh, Gastro-intestinal.—Alkalis, Betol, Bismuth preps., as Bismuthi Benzoas, Oxy-Bromide, Salicylas, Sulpho-Carbolas, Sulpho-Cyanid., Phosphas, Bismutose, Caffeine, Calcinol, Collinsonia Canadensis, Eucalyptus Globulus, Hydrastis, Hydrocyanic Acid, Opium, Potassii Bichromas, Salines.

Catarrh, Nasal.—Aconite, Ammon. Chlor., Quinine, Pilula Atropinæ Quininæ et Arsenici.
Acid. Carbolic. Buginarium, Anti-catarrhal salts, Bismuth. Co. Pulv., Carbolised Smelling Salts, Iodoformi Buginarium, Eucalypti Oleum, Camphor inhalation, Menthol inhalation, injection, wool and snuff, Menthol and Camphor inhalation, Supra-renal Extract.

Catarrh, Uterine.—*Acid. Carbolic. Glycerin., Boracis Glycerin., Camphorated Carbolic Acid, Iodoform. Gossyp. and Pessus, Plumbi Subacet. Glycerin., Opii et Amyli Enema, Zinci Sulph. Uterine Pencils, and with Alum.*

Catarrh, Vesical.—See **Cystitis.**

Chancres, Soft.—*Acid. Dichlor-Acetic, Acid. Nitric. Fumans, Acid. Sulph. Fumans, Airol, Hydrarg. Flav. Lotio, Hydrarg. Nig. Lotio, Hydrarg. Subchlor., Iodoform. and Ung., Michel's Paste, Plumbi Acet. Lotio, Resorcin.*

Chapped Skin.—*Acid. Boric. Ung., Camphor Ball, Ceratum Petrolei, Collodium, Glycerin. cum Aquâ Rosæ, Vaseline, Cucumeris Ung., Lanolin, Mollin. Ung. Phenoboric.*

Chilblains.—*Acid. Boric. Ung., Acid. Carbolic. Ung., Aconit. Linim., Belladonnæ Linim. and Linim. Co., Cajuput Ol., Capsici Linim., Collodium Iodi., Eucalypti Ol. Ung., Glycerini Plumbi Subacet. Ung., Hydrogen Peroxide Solution, Iodi Tinct. Decolor., Iodi Ung., Iodoform Wool and Ung., Oleanodyne, Plumbi Subacet. Glycerin.*

Chlorosis.—Arsenic, Carniferrin, Ferratin, Ferri Amara Mist., Ferri Aper. Mist., Ferri Bromid., Ferri Carb. Pil. (Blaud), Ferri Carb. Sacch., Ferri Co. Mist., Ferri Dialysat. Liq., Ferri Perchlorid. Tinct., Ferri Sulph. Pil., Ferro-Somatose, Hæmogallol, Hæmol, Hypophosphites, Lacto-Somatose, Levico Water, mild and strong, Manganese Citrate, Manganesii Oxidum, Marrubin, Mistura Ferri Arsenicalis, Myrrh et Aloes Pil., Peroxides, Phosphorus, Santonin, Sodii Persulphass, Somatose, Tinct. Martis., Tinctura Ferri Pomata, Vanadates.

Cholera.—Antitoxin of Haffkine, Atropine injection, Camphora, Chloromorphiæ Liq., Copper Salts, Coto and Cotoin, Cresol Salicylas, Hydrarg. cum Cretâ., Hydrarg. Subchlorid. cum Opio, Hypod. injections of Quinine Hydrochlorosulphate and Carbamide, Morphina, Opium, Paracotoin, Plumbi Acet., Plumbi cum Opio Pil., Resorcin, Tribromophenol-Bismuth.
Tannin rectal injection.

Chordee.—Aconite, Belladonna, Bromides, Camphora, Cannabis, Canthar. Tinct. (one minim hourly), Chloral Hydras, Hyoscine, Hyoscyamine, Morphinæ inj. hypod., Opii Suppos.

Chorea. — Actæa, Antipyrine, Arsenic, all Bromides, Cannabis and Chloral, Calcii Chlorid., Chloral Hydras, Cimicifugin, Conium and Coninæ Hydrobrom., Ferri Bromid., Ferri Phosph., Morrhuæ Ol., Phosphorus, Physostigma and Physostigmine, Sodium Salicylate, Strychnine, Valerianates, Zinci Bromid. and Oxide.

Colic.—Æther, Anethi Aqua, Belladonna, Calcis Aqua (for infants), Cajuput. Ol., Camphora, Chloroform, Chloromorphiæ Liq., Menth. Pip. Ol., Morphine preps., Opium preps., Tinctura Carminativa.

Colic Hepatic.—See **Calculi, Biliary.**

Colitis.—Bismuth Salicylate, Hydrastis, Methylene Blue, Naphthalene, Salicylates, Salol.
Saline and Boric Enemata.

Collapse and Fainting.—Æther inj. hypod., Æther. Spt., and Spt. Co., Alcohol, Ammon. Arom. Spt., Ammon. Vapor, Amyl Nitris., Digitalis Tinct. and Inj. Hypod. 20 m.

Conjunctivitis.—*Acid. Boric., Alsol, Alumen, Argenti Acetas, Argenti Fluoridum, Belladonna, Boroglyceride, Collyrium Adstringens Luteum, Hydrarg. cum Morphinâ Oleat, Hydrarg. Oxid. Flav. Ung., Hydroquinone, Iodol, Nargol, Opii Vinum, Resorcin, Thioform, Zinc. Sulph. Lotio.*

Conjunctivitis, Diphtheritic.—*Formaldehyde, Hydroquinone, Iodol, Quininæ Sulph. Lotio., Resorcin.*

Constipation.—Aloes and Aloin, Belladonna, Caffeine-Chloral, Cascara Sagrada and Capsules, Elixir, Pastils and Syrup of, Coloc. Co. Pil., Coloc. Co. cum Hyoscy. Pil., Compound Capsules of Castor Oil, Convolvulin, Elixir Ficorum, Emblic Myrabolans, Glycyrrh. Co. Pulv., Guaiacum and Sulphur Tablets, Hydrarg. Subchlorid., Iridin, Jalapin, Juglandin, Laxol, Magnes. Sulph., Mineral Waters, Mist. Laxativa, Mist. Rosæ Lax., Nux Vomic., Ol. Ricini et Glycerin, partes æquales, Phenolphthalein, Pil. Cascara Comp., Podophyllin, Purgen, Purgatin, Rhamnus Frangula, Rhei Co. Pil., Rhei Co. Pulv., Ricini Ol., Ricini Ol. Mist., Scammon. Co. Pil., Seidlitz Powders, Senna, Sennæ Confect., Sennæ Co. Mist., Sennæ Elixir, Sodii Phosph. Efferves., Sodii Sulphas Efferves., Sodio-Magnes. Sulph. Efferves., Sodii Sulpho-Ricinas, Sodii Sulpho-vinas, Sulphur, Sulphur. Confect., Tinct. Aloes Co., Tinct. Laxativa.
Glycerini Inject. and Suppositories.

Convulsions. — Amyl Nitris, Anæsthetics, Bromalin, Camphor, Chloroform, Monobrom., Morphine preps., Moschus, Podophyllin, Potassii Bromid., Rubidium Bromide, Sodii Bromid., Sodii Nitris.
Chloral Suppositories.

Convulsions, Puerperal. — Amyl Nitrite Capsule, Anæsthetics, Chloral Hydras, Chloroform, Nitroglycerin, Pilocarpine, Verat. Viride.

Cornea, Inflammation, and Ulcers of.—*Atropine, Belladonna, Cocain. Hydroch. Liquor, Daturine, Duboisine, Eserine, Fluorescein and Uranin (diagnostic), Hydroquinone, Hydrarg. Oxid. Flav. Ung., Hydrarg. Subchlorid, Infusum Abri, Pilocarpine.*

Corns.—See **Warts.**

Coryza.—See **Catarrh Nasal,** and **Hay Fever.**

Cough.—Acid. Hydrobromic., Belladonna, Camphor. Co. Tinct., Chloral Hydras, Codeina, Conium, Dionin, Gelsemium, Glycaphorm. Glycoheroin, Helenin, Heroin, Hyoscyamus, Linctus Camphor. Comp., Morphinæ Linctus, Morphinæ Troch., Morphinæ et Ipecac. Troch., Opium preps., Pastilli varii, *q.v.*, Picis Liq. Pil., Prunus Virginiana, Terpin Hydrate, Terebenum. Terpinol, Troch. Tussis.
Tinct. Benzoin Co., Camphor, and Creosote inhaled.

Cystitis. — Acid. Lactic, Alkalis, Antinosin, Alphol, Arenaria rubra, Arbutin, Betol, Benzoates, Buchu, Collinsonia Canadensis, Eucalyptus Globulus, Glycosal, Gokhru, Helmitol, Hetraline, Hydrastis, Juniper, Kava Kava, Pareira, Pichi, Saccharinum, Salacetol, Salol, Acid. Camphoric., Triticum repens, Urotropine, Uva Ursi.
Argenti Fluoridum, Sozal, Argyrol.

Croup, False.—See **Laryngismus Stridulus.**

Debility.—Alcohol, Arsenic preps., Bone Marrow Extract, Bovril, Calcii Hypophosph. Syrup, Calcii Phosph., Capsulæ C uoris, Cinchona preps., Ferratin, Gentiana, Glycerophosphates, Hypophosphites, Iron Salts, Levico Water, mild and strong, Maltum, Morrhuæ Ol., Phosphorus, Quassia, Quinine preps., Somatose, Strychnine, Syrup Ferri Phosphat cum Quinina et Strychnina.

Delirium Tremens, and see **Alcoholism.**—Ammon. Carb., Auri Chlorid., Bromides, Camphora Monobromata, Capsicum, Chloral, Digitalis, Hyoscine, Hyoscyamine, Opium preps., Phosphorus, Quinine preps., Strychnine, Sulphonal Valerianates.

Dengue Fever.—Sodium Salicylate, Salicin, Potassium Iodide, Phenacetin and Caffeine. No drug is specific.

Diabetes. — Acid. Lactic., Alkalis, Arsenic Bromide, Aspirin, Cacodylates, Codeina, Codeinæ Pil. Comp., Convallaria, Creosotum, Dulcin, Eucalypti fol. infusum, Glaucium luteum. Glycerin, Hexamethylene tetramine, Hydrogen Peroxide, Iron Salts, Jaborandi. Jambul, Lævulose, Levurine, Morphina, Nuclein, Opium, Oxygen, Ozonic Ether, Pancreatine, Phosphorus, Potassium Chlorate, Saccharin, Elixir and Tabellæ of, Salol, Sodii Arsenias, Sodii Phosphas. Sodii Salicylas, Supra-renal gland, Thymol, Thyroid gland, Uranii Nitras, Yeast.

Diarrhœa. — Acid. Camphoric, Acid. Carbolic., Acid. Gallic., Acid. Hydrochloric Dil., Acid. Lactic., Acid. Sulph. Dil. and Aromat., Agaricus albus and Agaricin, Anthemidis Tinct., Anthemis, Benzo-naphthol, Bismal, Bismuthi et Cerii Salicylas. Bismuthi Salicylas, Bismuth preps. Bismuth Tannate, Calcii Carb., Calcii Salicylas, Calcis Aqua, Camphora, Catechu, Coto, Cotoin, Cretæ Arom. Pulv., and cum Opio, Cupri Sulph., Cupri Sulphocarbol., Eucalyptus Gum., Ferri

Salicylas, Fortoin, Honthin, Ipecac. Co. Pulv., Kino, Mist. Antiseptica U.C.H. for infants, Naphthalin, Naphthol, Opium preps., Plumbi Acet., Quininæ Salicylas, Resorcin, Ricini Ol., Sodii Phosphas, Salacetol, Tannacol, Tannigen, Tribromophenol-Bismuth.

Acid. Tannic. Suppos., and cum Opio, Amyli Enema, and cum Opio. Gallæ Suppos. and cum Opio, Tannin rectal injection, Turpentine Stupes.

Diphtheria.—Acid. Salicylic., Antitoxin, Ferri Perchlorid., Sodii Benzoas, Sodii Chloras, Sodii Hyposulphis., Tribromophenol.

Acid. Benzoic. Nebula, Acid. Carbolic. Glycerin. and Nebula, Acid. Lactic. Nebula, Acid. Sulphuros. Nebula, Calcis. Aquæ Nebula, Chlori Gargarisma, Eucalypti Ol. and Vapor, Formol Spray, Hydroquinone, Iodol pigment, Loeffler's pigment, Menthol pigment, Naphthol cum Camphora, Ozonic Ether, Papayotin, Resorcin, Sodii Benzoatis Nebula, Sodii Chlorinat. Liquor.

Dipsomania.—See **Alcoholism.**

Dropsy, Cardiac.—Asparagin, Caffeine, Convallaria majalis, Delphina, Digitalis, Digitalin, Elaterium, Erythrophlœum, Iodo-Caffeine, Pyoktanin, Strophanthus, Veratrum Viride.

Dropsy, Hepatic.—Ammon. Benzoas, Ammon. Chlorid., Copaibæ Bals., Cytisin, Hydrarg. Pil., Hydrarg. Subchlorid., Sodii Bicarb., Sparteinæ Sulphas, Taraxacum.

Dropsy, Renal.—Apocynum Cannabinum, Blatta orientalis, Buchu, Caffeina, Diuretin, Delphina, Elaterium, Gin, Hydrarg. Pil., Iodo-Caffeine, Iodo-Theobromine, Jalapa, Pilocarpine, Potass. Acet., Potass. Tart. Acida, Potassii Iodid., Potass. Nit., Scilla, Sodii Iodid., Theocin, Theophylline.

Dysentery.—Belæ Fructus, Bismuthi et Cerii Salicylas, Calotropis, Cannabis, Cassia Beareana, Cupri Sulphocarb., Eucalypti Gum., Guarana, Hæmatoxylum, Hamamelis, Hydrarg. Perchlorid., Ipecacuanha, Ipecacuanha sine Emetina, Ipecac. Co. Pulv., Opium, Magnesium and Sodium Sulphates, Calomel, &c. (the evacuant method), Naphthalene, Plumbi Acetas, Simaruba, Terebenum purum, Terebinth. Ol., and Stupes of.

Dysmenorrhœa.—Actæa, Æther Spt. cum Opii. Tinct., Amyl Nitris, Anemonin, Antipyrine, Apiol, Butyl Chloral, Cannabis and Cannabin Tannas, Cannabis and Chloral, Carbon. Tetrachlor. Vapor, Cimicifugin, Gossypii Rad. Cort., Piscidia, Potass. Bromid., Pulsatilla, Salix nigra, Saw Palmetto, Serpentaria, Sodii Salicylas, Valerian, Viburnum prunifolium, and *see page* 354.

Dyspepsia.—Acid. Carbolic. Perle and Pil., Acid. Nit. Dil., Acid. Hydroch. Dil., Aloes and Aloin, Ammon. Carb., Arsenic, Bismuth. Benzoas, Carb., Oxy-bromid., Oxychlorid., Subnit., Phosphas, Sulphocarbol., and Sulphis; Calcii Peroxid., Capsicum, Cerii Oxalas, Condurango, Creosote, Creosoti Valerianas, Emblic Myrabolans, Gentiana, Gingerin, Hydrarg. cum Creta, Hydrastis, Hydrocyanic Acid, Monsonia, Nux Vomica, Pancreatin, Papain Glycerin. Acid., Pepsin, Pepsin and Bismuth Tablets, Podophyllin, Potass. Bichromas, Quassin, Quinine preps., Rhei Rad., Rumicin, Sal Polychrestum, Sanguinarin, Sodii Bicarb., Sodii Hyposulphis, Sodii Sulphocarb., Sodii Taurocholas, Stillingia, Strontii Lactas, Tinct. Rhei Aquos, Troch. Antacidi.

Dyspnœa.—Æther Spt., Æthyl Iodid., Alcohol, Amyl Nitris, Erythrol Nitrate tablets, Lobelia, Nitroglycerin, Ozonic Ether, Potassii Cobalto-nitris, Quebracho and Aspidospermine, Sodii Nitris.

Earache.—*Atropinæ Liquor or Oleatum* (*diluted*), *Chloroformi Vapor, Cocaina cum Oleo, Delphina in Spirit or in Ung., Morphinæ Oleatum* (*diluted*), *Opii Tinct. cum Oleo. Olivæ.*

Eczema.—Arsenic preps., Bromocoll, Iron Salts, Morrhuæ Ol., Phosphorus, Sulphides, Sulphur.

Acid. Boric. Lotio and Ung., Acid Carbolic Lotio and Ung., Acid Salicylic Ung., Alkaline lotions, Aristol, Æthol, Bismuth Nit. Glycerin, Collargol, Calaminæ Lotio, Calcis Aqua, Calcis Linim., Chrysarobini Ung. (*weak*), *Creolin, Dermatol, Diachyli Ung., Dymol, Europhen, Gallanol, Huile de Cade, Icthalbin, Ichthyol and Collodion and paste of, Isarol, Kaolin Ung., Lanolin, Mollin, Naftalan, Naphthol, Petrosulfol. Plumbi Stearas, Plumbi Subacet. Glycerin. and Ung., Pusol, Resorcin, Sphagnol, Tar, Thigenol, Thio-resorcin, Thiol, Thymol, Tumenol, Ung. Hydrarg. Ammon, Ung. Rumicis, Ung. Rusci Co., 'X' rays and Finsen Light, Zinci Boras, Zinci Cremor, Zinci Oleat. Pulv. and Ung., Zinci Ung.*

Emetics.—Apomorphine $\frac{1}{10}$ grain inject. hypod., Antim. Tart. 1 to 2 grains, and Vinum 2 to 4 drachms, Emetine $\frac{1}{100}-\frac{1}{25}$ grain, Ipecac. 30 grains, and Vinum 4 to 6 drachms, Mustard a tablespoonful, Sodii Chloridum a tablespoonful, Zinci Sulphas 20 to 30 grains.

Endocarditis.—Belladonna, Caffeina, Coronillæ Ext., Digitalis, Levurine, Neuclein and Anti-Streptococcic Serum.

Enuresis.—Atropine, Belladonna, Ergot, Hyoscine, Hyoscyamus with Sodium Bromide, Lycopodium, Rhus Tox. See also **Incontinence of Urine.**

Epilepsy.—Adonis, Æthyleni Bromid., Ammon. Bromid., Amyleni Hydras, Amyl Nitris, Antifebrin, Argent. Nit., Arsenic, Arsen. Bromidum, Atropine, Auri Bromid. and Chlorid., Belladonna, Borax, Bromalin, Bromal-Hydras, Brominol, Bromipin, Bromocoll, Calcium Bromide, Camphora Monobromata, Cannabis, Citras, Lactas and Sulphas, Hydrargyri Biniodidum, Liquor Auri et Arsenii Brom. and Liquor Auri et Hydrarg. Bromid., Magnesium Bromide, Manganese Bromide, Nitroglycerin tablets or Liquor, Ozonic Ether, Picrotoxin, Potass. Bromid., Pot. Nitris, Rubidium-Ammonium Bromide, Rubidium Bromide, Simulo, Sodii Bromid., Sodii Nitris, Strontii Bromid., Strychnine, Valerianates, Viscum album, Zinci Bromid.

Epistaxis.—Acid. Gallic., Aconite, Digitalis, Ergotæ inj. hypod., Ferro-Alumen, Ferri Perchlorid. Liq., Hamamelis, Terebinth. Oleim.

Acid. Tannic., Adrenalin, Alumen, Ferri et Quininæ Chloridum, Hamamelis, Matico, Styptic Colloid.

Erysipelas.—Aconite, Aconitina and Granules of, Antifebrin, Antistreptococcic Serum, Belladonna, Digitalis, Ergot, Ferri Perchlorid., Veratrum viride.

Acid. Picric. Pigment, Acid. Sulphuros. Lotio, Amylum, Amyli Glycerin., Argent. Nit., Belladonnæ Glycerin., Calaminæ Lotio, Cocainæ Ceratum, Collodium, Creosotum et Amylum, Ergotine in Sol., Gossyp. Acid. Boric., Iodi Pigment.

Erythema.—*Amyli Glycerin., Anthemid. Infus., Diachyli Ung., Kaolin and Lotio. or Ung., Papav. Infus., Plumbi Subacet. Lotio., Vaseline, Zinci Oxid. and Ung.*

Exophthalmic Goitre.—Belladonna, Digitalis, Duboisine, Iodine preps., Iron Salts, Potass Iodid., Quinine preps., Sparteine.

Tinct. Iodi. Oleosa, Ung. Iodi.

Eye: Pupil, Contractors of.—*Arecoline in 1 % solution, Jaborandi and Pilocarpine, Opium and Morphine, Physostigma, Physostigmine.*

Eye: Pupil, Dilators of.—*Atropine and Salicylate, Atropine-Methyl Bromide, Belladonna, Cocaine, Daturine, Duboisine, Ephedrine, Eumydrin, Euphthalmine, Homat. c. Cocaina, Homatropine, Hyoscine salts, Hyoscyamine, Mydrine, Nicotine, Oleum Atropinæ, Oleum Atroscinæ, Oleum Homatropinæ, Scopolaminæ Hydro-bromid.*

Eye: Local Dilator, but Contracts when given internally in suitable doses—Gelseminine.

Fainting.—See **Collapse.**

Favus.—See **Parasites, Vegetable, of Skin.**

Fetid Breath.—See **Breath, Fetid.**

Fetid Perspiration.—See **Perspiration, Fetid.**

Fetid Nasal Discharges.—See **Ozæna.**

Fever. — Acetanilide, Acid. Oxy-naphthoic, Acid. Salicylic., Aconite, Ammon. Acet. Liq. and Carb., Antimony, Antifebrin, Antipyrine, Aspirin, Bromopyrin, Chinoline, Cinchonine, Cinchonidinæ Sulph., Digitalis, Euphorin, Gelsemium, Granules d'Aconitine, Monabromacetanilide, Phenacetin, Phenalgin, Phenocoll Hydrochlor., Potass. Acet. Chloras and Citras, Pyramidon, Pyranum, Quinine preps., Quinidinæ Sulph., Quinetum, Salicin, Salipyrin, Sodii Salicylas, Thallin, Thermodin, Urea, Veratrum Viride, Warburg's Tincture.

Fissures of Nipples.—*Acid. Tannic. Glycerin., Alcohol, Argent. Nit. pigment, Cocainæ Hydroch. Liquor, Collodium Flexile, Hydrastis Tinct., Plumbi Subacet. Glycerin., Styptic Colloid.*

Flatulence.—Acid. Carbolic., Acid. Sulphuros., Æther. Spt., Asafetida, Betol, Bismuth preps., Capsicum, Carbo Ligni, Chloromorphiæ Liquor, Creosote, Magnesia preps., Menth. Pip. Ol., Naphthalene, Naphthol, Nux Vomica, Pepsin preps., Sodii Bicarb., Sulpho-carbolates, Tinct. Carminativa, Zingiberis Tinct.

Gall Stones and Hepatic Colic.—Æther Spt., Amyl Nitris, Anæsthetics, Bismutose, Chloral Hydras, Chologen, Iridin, Magnesium Sulphate, Mercurials, Morphine preps., Nitroglycerin, Perles of Ether and Turpentine, Podophyllin, Salicylates, Sodium Benzoate, Sodium Glycocholate. Various Mineral Waters, *e.g.*, Carlsbad, *q.v.*

Gastralgia.—Acid. Hydrocyanic. Dil., Æther. Spt., Alkalis, Anæsthesine, Belladonna, Bismuth, Bismuthi Salicylas, Bismuthi Oxy-Bromid., Calcis Aqua, Cerii Oxalas, Chloroform, Chloromorphiæ Liq., Coca and Cocaina, Codeina, Creosote, Magnesia, Manganesii Oxid., Pepsin.
Linim. Sinapis, Ung. Ipecac. et Crotonis.

Gastric Catarrh.—See **Catarrh, Gastric.**

Gastro - Enteritis.—Bismuth preps., Calcii Salicylas, Carminatives and Sedatives, Collargol, Sodii Creosotas, Strontium Salts. *Vide* also **Catarrh, Gastric.**

Gastric Ulcer.—Olive Oil.

Glands, Enlarged.—Calcii Chlorid., Ferri Iodid. and Iron Salts, Iodum, Morrhuæ Ol., Potass. Iodid., Sodii Iodid.
Cadmii Iodid. Ung., Hydrarg. Oleat. and Emplast., Iodi Decolor. Tinct., Iodoform, Iod. Linim. and Ung., Potass. Iodid. Ung.

Glaucoma.—*Physostigminæ Sulph. and Oleum, Pilocarpina.*

Gleet.—See **Gonorrhœa.**

Goitre.—Acid. Hydrofluoric. Dil., Arsenic, Belladonna, Bromides, Convallaria, Hydrarg. Biniodid., Hydrastis, Iodum, Phosphorus, Potass. Iodid., Sodii Iodid., Thymus Gland, Thyroid feeding and preps.
Acid. Acetic. inj. hypod., Acid. Osmic. inj., Hydrarg. Biniodid. Ung., Hydrarg. Oleat., Hydrarg. Ung., Iodi inj. hypod. T. H., Iodi Linim. and Ung.

Gonorrhœa.—Acid. Carbolic., Acid. Cubebic., Acid. Tannic., Aconite, Alumnol, Argentamine, Argent. Nit., Bougies Urethral (*see* Index), Copaiba, Cubebs, Gonal, Gonosan, Helmitol, Hetraline, Hydrarg. Perchlor., Hydrastis Tinct., Iodoform, Iodof. et Eucalypti Cereolus, Iodoformi Cereolus, Iron Salts, Kava-Kava, Pichi, Potass. Permang., Potash Salts, Resorcin, Saline Aperients, Salix nigra, Santali Ol. (*see* Ol. Santal chapter), Saw Palmetto, Zinci Chlorid. Permang., and Sulphocarb.
Anæsthesine, Antrophores of Thallin, Argenti Acetas, Argenti Fluoridum, Argentol, Argonin, Argyrol, Bismuthi Oxyiodidum, Collapsubes various (see Index), Collargol, Europhen, Iodoformal, Largin, Protargol, Wood Wool Bags.

Gout.—Acid. Quinic., Aconite, Asaprol, Aspirin, Broma, Hydras, Citarin, Chinotropin, Colchicinæ Salicylas (*capsules*)l Colchicum and Colchicin, Granular Eff. Piperazine and Phenocoll, Guaiacum, Kava-Kava, Lithii Carb. and Citras, Lithii Hippuras, Lithii Tart. Acid., Lithion, Lycetol, Lysidine, Magnes. et Sodii Sulph., Morphinæ Inject. Hypod., Piperazine, Piperidin Guaiacolas and Tartras, Potass. Citras and Iodid., Pot. Chloride as Table Salt, Sidonal, Sidonal (new), Sodii Benzoas, Hippuras and Iodid., Sodii Phosph., Sodii Taurocholas, Uricedin, Uropherin, Urosin, Urotropine, Ursal.

Graves' Disease.—See **Goitre Exophthalmic.**

Gums, Inflamed, and Spongy.—*Acid. Carbolic., Alumen, Anise mouth wash, Iodi Tinct. and cum Aconiti Tinct., Krameriæ Tinct., Listerine, Lysoform Mouth Wash, Myrrhæ et Boracis Tinct., Potass. Chlorat., Pastil, Tablet and Troch., Pyrethri Tinct., Sodii Chloras and Troch., Thymoglycin.*

Hæmatemesis. — Acid. Gallic., Acid. Sulph. Dil., Adrenalin, Alumen,Ergota, Hamamelis, Iron Persalts, Plumbi Acet., Supra-renal Extract, Terebinth. Ol.

Hæmaturia.—Acid. Gallic., Antimony, Camphor, Cannabis, Erigeron Canadense, Ergota, Ferro-Alumen, Hamamelis, Terebinth. Ol.

Hæmoptysis.—Acid. Gallic., Acid. Pyrogallic., Acid, Sclerotic., Acid. Sulph. Dil., Adrenalin, Alumen, Antipyrine. Digitalis, Erigeron Canadense, Ergota and Ergotin, Hamamelis, Opium.

Hæmorrhage.—Acid. Gallic., Acid. Sclerotic., Acid. Sulph. Dil., Adrenalin and Supra-renal preparations, Calcium Chloride, Cornutine, Cupri Sulph., Digitalis, Ergota, Ergotin, Eucalyptus Gum, Ferri et Quininæ Chlorid., Ferro-Alumen, Gelatin, Hæmatoxylum, Hamamelis, Ice, Iron Persalts, Plumbi Acet., Potassii Succinas, Terebinth. Ol.

*Acid. Tannic., **Alumen**, Bryonia, Catechu, Cupri Sulph., **Cupri** Sulphocarbolas, Erigeron Oleum, Eucalyptus Gum, Ferri Perchlorid., Ferro-Alumen, Hamamelis, Monsel's Solution, Styptic Colloid, Zinci Chlorid. Liq.*

Hæmorrhage, Post Partum. — Acid. Sclerotic., Caffeinæ Inject., Cannabis and Chloral, Cornutine, Ergota, Ergotin inj. hypod., Ergotinini inj. hypod., Ferri et Quininæ Chlorid., Gossypii Rad. Cort., Hydrastin, Nux Vomica, Opium with Alcohol, Strychnina and Salts, Supra-renal Preps.

Adrenalin, Alumen, Ferri Perchlorid., Gossyp. and Liquor.

Hæmorrhoids.—Suitable laxatives are Cascara Sagrada preps., Conf. Piper., Conf. Sennæ, Infus. and Mist. Sennæ Co., Pulv. Glycyrrhizæ Co., Sulphur.

Acid. Boric. Ung., Anusol Suppos., Coninæ Ung., Gallæ cum Opio Ung., Glyc. and Ung. Chrysarobin, Hamamelid. Liq., Ranunculus Ficaria Ung., Suppos. Bellad. et Morph., Suppos. Cocain et Morph., Suppos. Supra-renal et Morph., Ung. Bismuth et Cocain, Collapsubes—Bismuth, Morph. et Cocain and various (see Index).

Hay Fever.—Ammonii Chlorid., Anthoxanthum, Belladonna, Camphor, Grindelia, Liq. Ethyl. Nitritis, Potass. Iodid., Quinine preps.

Acid. Salicylic. Pulv., Bismuth. Co. Pulv., Carbolised Smelling Salts, Carbon. Tetrachlor. Vapor, Cocain. Hydroch. Liquor, Douche of Mercuric Iodide, 1 in 2000, Eucalypti Oleum, Menthol, Menthol and Camphor, Pigmentum Antisepticum, Pollantin, Quininæ Collunarium, Stramonium Fumes, Supra-renal Extract (excellent).

Headache, Bilious or Sick.—Antipyrine, Chloro-Sodio-Magnesian Aperient, Euonymin, Guarana, Hydrastis, Iridin, Phenacetin, Podophyllin, Sodii Phosph. Efferves., Sodii Sulph. Efferves., Sodio-Magnes. Sulph. Efferves., Sodio-Mag. Sulph. with Caffeine.

Headache, Congestive or Inflammatory.—Actæa, Ammon. Chlorid., Antimony, Antipyrine, Hydrarg. Subchlorid., Ricini Ol., Salicylates of Sodium, &c., Veratri Viridis Tinct.

Headache, Nervous.—Acetopyrin, Acid. Hydrocyanic., Actæa, Ammon. Arom. Spt., Antipyrine, Apolysin, Arsenic, Auri Bromidum, Belladonna, Bromides, Butyl Chloral, Caffeine, Camphora, Cannabis, Chloralimide, Cimicifugin, Citrophen, Ferri Valerianas, Guarana, Iodo-Caffeine, Iodo-Theobromine, IronSalts, Methylene Blue, Migranin, Nitroglycerin, Oxidum and Valerianas, Phenacetin, Phenazone, Quininæ Valerianas, Theine, Zinci Lactas.
Radium.

Hectic Fever.—Acid. Benzoic. and Benzoates, Acid. Salicylic., Acid. Sulph. Aromat., Agaricus albus and Agaricin, Gelsemium, Phenocoll, Picrotoxin, Quinine preps., Salicin, Salicylates.

Hepatic Colic.—See **Calculi, Biliary.**

Herpes, and Zoster.—Morphinæ inj. hypod. (for pain), Quinine preps., Salines and Saline Aperients,
Amyli Glycerin., Anodyne Colloid, Cocainæ Ceratum, Collodium, Hydrarg. Ammon. Ung., Hydrarg. Oleat. Ung., Ichthyol, Menthol (for pain), *Zinci Oleat. Ung., Zinci Ung.*

Hiccough.—Æther. Spt., Amyl Nitris, Camphora, Chloral, Chlorof. Spt., Extract. Ergotæ Liq., Morphine preps., Sodii Bicarb.

Hordeolum.—*Argent. Nit., Belladonnæ Fotus, Hydrarg. c. Morphinâ Oleat., Iodi Tinct., Ung. Hydrarg. Oxidi Flavi, Ung. Metallorum.*

Hydrophobia.—Anæsthetics, Amyl Nitris, Cannabis Indica and Cannabin, Chloral, Curara, Hydrogen Peroxide, Hyoscine, Hyoscyamine, Morphine, Nitroglycerin, Pelletierine, Physostigma and Physostigmine, Pilocarpine, Rabies Antitoxin.
Immediate use of Actual or Electric Cautery, or Nitric Acid, or Argent. Nit. Solid, or other caustic paste at hand.

Hysteria.—Actæa, Asafetida, Auri Bromidum, Auri Chlorid., Bromal, Calcium, Magnesium, Manganese and other Bromides, Cannabin Tannate, Cannabis Indica, Cypripedin, Iron Salts, Nux Vomica, Phosphorus, Pulsatilla, Quinine preps., Strychnine, Valerian and Valerianates, Validol, Zinc Salts.

Impotence.—Arsenic, Auri et Sodii Chloridum, Cannabis Indica and Cannabin Tannas, Cantharides, Coca and Cocaine, Damiana, Easton's Syrup, Ferri Perchlorid., Gokhru, Nux Vomica, Phosphorus, Piperazina, Sanguinaria, Spermin, Strychnine, Testicular Extract, Yohimbin, Zinci Phosphid.

Incontinence of Semen.—Antipyrine, Belladonna, Bromides, Camphor Monobromide, Chloral, Ergota, Ferri Perchlorid., Ferri Phosph., and Ferri Phosph. c. Quin. et Strych. Syrup., Gokhru, Hyoscine, Hyoscyamine, Salix nigra, Saw Palmetto.

Incontinence of Urine.—Ammon. Brom., Antipyrine, Belladonna, Calcii Glycerophosph., Calcii Phosph., Camphor. Monobrom., Cantharides, Ergota, Ferri Iodid., Ferri Perchlorid., Gokhru, Hyoscyamus, Lycopodii Tinct., Naphthalin, Rhus.

Indigestion.—See **Dyspepsia.**

Inflammation. — Aconite, Antifebrin, Antimony, Antipyrine, Belladonna, Digitalis, Gelsemium, Granules d'Aconitine, Hydrarg. Subchlorid. and cum Opio, Opium, Quinine preps., Salicin, Veratrina.
Antiphlogistine, Thermofuge.

Influenza.—Actæa, Ammon. Acet. Liq., Æth. Nit. Spt. Ammoniæ Spt. Aromat., Antim. Tart., Aristochin, Camphor, Cocain. Hydroch. Liquor., Ipecac. Co. Pulv., Inhalations of Eucalypti Ol. Menthol, Menthol and Camphor, Opium and Morphine preps., Phenacetinum, Quinine preps., Salicinum, Salipyrin, Sodii Salicylas, Tinct. Quinin. Ammon.
Acid. Carbolic., Vapor or Spray, Pollantin.

Insomnia.—Acetanilide, Ammon. Bromid., Amyleni Hydras, Antifebrin, Antipyrine, Bromal Hydras, Bromidia, Butyl Chloral, Camphor, Cannabis Indica and Cannabin, Chloral, Chloralamide, Chloralimide, Chloralose, Chloretone, Chlorobrom, Coca, Codeina, Dormiol, Hedonal, Hop pillows, Hyoscyamine, Hypnal, Hypnone, Liquor Bromo-Chloral Comp., Lupulin, Morphine, Opium, Paraldehyde, Phenazone, Potassii Bromid., Scopolaminæ Hydrobromid., Sodii Bromid., Somnal, Stramonium, Strychnina and its salts, Sulphonal, Syrupus cum Narceina, Tetronal, Trional, Veronal, Urethane.

Intertrigo.—*Acid. Boric. and Ung., Acid. Tannic. Glycerin., Bism. Sulpho-Cyanid., Calaminæ Lotio, Calcii Carb., Calcis Aqua, Camphor, French Chalk, Fuller's Earth, Kaolin, Lysoform, Vaseline, Zinci Cremor and Ung., Zinci Oleat Pulv.*

Intestinal Antiseptics.—See **Antiseptics.**

Intestinal Worms.—See **Parasites, Intestinal.**

Iritis.—Colchicum, Hydrarg. Perchlorid. and Subchlorid., Iodum, Potass. Iod.
Atropina cum Vaselin., Atropinæ Sulph. Guttæ and Lamellæ, Belladonna, Duboisine, Dionine, Sterules various.

Itch.—See **Scabies.**

Jaundice.—Acid. Nitro-Hydroch. Dil., Aloes, Ammon. Chlorid., Benzoates, Euonymin, Ferri or Sodii Succinas, Hydrarg. cum Cretâ, Hydrarg. Subchlor., Hydrastis, Iridin, Myricin, Podophyllin, Sennæ Co. Mist., Sodii Phosphas and Sodii Phosph. Efferves., Sodii Salicylas, Sodii Sulphas, and Sodii Sulph. Efferves., Taraxacum.

Laryngismus Stridulus.—Amyl Nitris, Bromides, Chloral, Coninæ Hydrobrom., Emetin, Piscidia.

Laryngitis, Acute.—Aconiti Tinct. or Pastil., Ammon. Acetat. Liq., and Ammon. Chlorid., Antimonials, Antipyretics, Calomel, Codeine Jelly, Dionin, Glycaphorm, Heroin, Linctus (various), Pulsatilla.
Counter irritation, fermentations, leeches.—Inhalations of Ammon. Chlorid., Sprays of Menthol in Oil, Thymol, Tinct. Benzoin Co., Belladonna and Conium, Juniper.

Laryngitis, Chronic.—Ammon. Chlorid. and Liquorice, Codeine Jelly, Creosote preps. Cubebs, Dionin, Glycaphorm, Heroin, Morphine preps., Pautauberge's Solution, Tar preps., Terebene, Terpin.
Injectio Creosoti or Creosoti Co., Insufflatio Morphinæ et Bismuth and of Catechu, or Menthol, or Tannin., Pastils of

Glyco-gelatin (see list). Pigments of Cocaine, Eucaine, Menthol, &c. Vapour of Creosote, Eucalyptus Oil, Juniper, Pini Sylvestris, Terebene, Thymol.

Leprosy.—Anacardium, Gurjun Balsam, Gynocardiæ Ol., Serum, Tannic Acid.

Leucocythemia.—Arsenical preparations, Cacodylates, Digitalis, Glycerophosphates, Hypophosphites, Iodine, Iron Salts, Liquor Ferri Peptonat., Marrubin, Phosphorus, Syrupus Trium Phosphatum, Zinc Phosphide.

Acid. Carbonic. (inhaled).

Leucorrhœa.—Iron Salts, Mineral Acids, Manganese preps., Vegetable Tonics.

Abies Canadensis, Acid. Boric Lotio, Acid. Carbolic. Lotio, Alumen, Boric Acid in powder, Hydrastis, Lysoform Pessaries, Pessus Quininæ, Potassii Permang., Pulsatilla lotion, Tannin and Alum Injection, Zinci Sulphocarb, Zinol.

Locomotor Ataxy.—Acetanilide, Aluminii Chlorid., Antifebrin, Argent. Nit., Argent. Oxid. Morrhuæ Ol., Arsenic, Mercury Benzoate, Morphine, Nux Vomica, Phenazone, Phosphorus, Potass. Iodid., Quinine, Santonin, Strychnine.

Lumbago.—Actæa, Ammon. Chlor., Atropine, Belladonna, Capsicum, Cimicifugin, Colchicum, Morphina inj. hypod., Potass. Iodid., Quinine. All Purgatives as Chelsea Pensioner, Guaiacum and Sulphur, Salicylates.

Aconite Liniment, Amyl Salicylate, Apolysin, Atropinæ Linim., Belladonnæ Linim., Capsici Linim., Chloroform Liniment, Dowsing Heat Rays, Iodum Oleatum, Menthol Linim., Menthol Plaster, Mesotan, Ulmaren, Methyl Salicylate Plaster, Opii Linim., Picis Empl., Veratrinæ Ung., 'X' Rays.

Lupus.—Amyli Iodid., Arsenic, Auri·Chlorid., Gynocard. Ol., Iodum, Morrhuæ Ol., Phosphorus, Quinine preps., Thyroid gland.

Acid. Chromic., Acid. Cinnamic, Acid. Lactic., Airol, Camphora Salicylata, Finsen Light, Gynocardiæ Ung., Iodoform, Isarol, Lassar's Paste, Lysoform, Lysol, Potassii Cantharidas, Radium, Resorcin, Thiosinamin, Tuberculin, Tumenol, 'X' Rays.

Lupus. Erythematosus.—*Finsen Lamp, Radium, Salicin, 'X' Rays.*

Malaria.—*Vide* also **Ague and Fevers.**—Arsenic, Quin. Hydrobrom. injections, Salicin, Salicylates, Urea.

Hydrofluoric Acid inhalations.

Mammary Abscess.—See **Breast, Inflammation of.**

Mania.—Apomorphine, Veronal, and other hypnotics, Atropine, Bromides, Cannabis and Cannabin Tannas, Chloral Hydras, Conine, Diacetyl and Ethyl Morphine, Digitalis, Duboisine, Gelsemina, Hyoscine salts, Hyoscyamine, Morphine preps., Opium preps., Paraldehyde, Sodium Bromide, Sulphonal, Trional.

Marasmus.—Arsenical preps., Lecithin, Iron preps., Meat preparations, Marrubin, Medullary Glyceride, Thymus.

Measles.—Aconite, and Pastil of, Æther Nit. Spt., Ammon. Acet. Liq., Ammon. Carb., Ipecacuanha, Potass. Tart. Acidus.

Melancholia.—Bromides, Brominol, Bromipin, Camphora, Coca and Cocaine, Cannabis, and Cannabin Tannas, Damiana, Musk, Nux Vomica, Phosphorus, Valerianates.

Menière's Disease.—Acid. Salicylic., Bromides, Gelsemium, Gelsemine, Pelletierine.

Menorrhagia.—Acid. Gallic., Acid. Sclerotic., Acid. Sulph. Dil., Beberinæ Sulphas, Bromides, Cannabin, Digitalis, Ergota, Ergotin, Eumenol, Ferro-Alumen, Hamamelis, Hydrastis, Iron Persalts, Plumbi Acetas, Salipyrin, Viburnum, Vinca Major.

Migraine.—See **Headache, Nervous.**

Milk, to increase flow.— Acid. Lactic., Jaborandi and Pilocarpine, Malti Ext., Maltolivine, Meat Extracts, Marrubin, Thyroid Gland.

Ricinus Communis, leaves and oil of.

Milk, to arrest flow.—Agaricus albus and Agaricin, Belladonna and Atropine, Conium, Ergota, Saline Purgatives, Sodii Iodid.

Belladonnæ Empl., Glycerin. and Linim., Glycerinum Atropinæ.

Morphine Habit.—Cactus, Camphor, Cocaina, Dionin, Dormiol, Heroin, Hyoscina, Nitroglycerin, Sodii Bromidum, Sparteinæ Sulphas, Trional.

Muscular Rheumatism or Myalgia. — Actæa, Ammon. Chlorid., Atropinæ inj. hypod., Cimicifugin, Iron Salts, Morphinæ inj. hypod., Salicylates.

Belladonnæ Glycerin and Linim., Capsici Empl. and Linim., Ether Spray, Iodi. Linim., Menthol, Opium (in poultice), Veratrinæ Ung.—See also **Lumbago.**

Myxœdema.—Arsenic, Iron Salts, Jaborandi, Nitroglycerin, Pilocarpine, Strychnine Preps., Thyroid feeding and preps.

Nasal Catarrh.—See **Catarrh, Nasal.**

Nævi.—*Acid. Chromic., Acid. Nitric., Actual cautery and vaccination, 'X' rays, Collodium, Sodii Ethylas, Zinci Chlorid. Iodid. and Nitras.*

Nephritis, Chronic.—Buchu, Copaiba, Gokhru, Haustus Imperialis, Hordei Dec., Iodo-Caffeine, Iodo-Theobromine, Jaborandi, Lini. Infus., Pareira, Pot. Nit., Rubus Chamæmorus, Santal. Ol., Scoparius, Sodii Sulphocyanidum, Strontii Lactas, Triticum Repens, Uva Ursi.

Nervous Debility, Nervousness.—Acid. Hydrobromic., Acid. Phosph. Dil., Agurin, Ammon. Bromid., Arsenic preps., Asafetida, Atropine Methyl Bromide, Auri et Sodii Chlorid., Bromal, Bromalbacid, Bromipin, Calcii Bromidum, Calcii Glycerophosphas, Camphora, Cannabis Indica, Coca Wine, Cypripedin, Easton's Syrup, Ferri Glycerophosphas, Ferric Salts, Hypophosphites, Ignatiæ Tinct., Lavand. Co. Tinct., Lecithin, Liquor Auri et Arsenii Bromidi, Liquor Auri et Hydrarg. Brom., Magnesii Brom., Maltolivin, Manganes. Bromidum, Marrubin, Ol. Morrhuæ, Phosphorus, Potass. Bromid., Quinine preps., Quininæ Valerianas, Salicin, Scutellarin, Spermin, Strychnine, Sumbul, Valerian preps., Validol, Valyl, Veronal, Zinci Valerianas.

Neuralgia.—Aconite, Actæa, Æther (injected), Ammon. Carb., Ammon. Chlorid., Antipyrine, Arsenic, Aspirin, Bromides, Butyl Chloral, Caffeine, Cannabina, Chloral-Hydras, Cinchonine, Cinchonidinæ Sulph., Colchicine, Conium and Coninæ Hydrobromid., Exalgin, Euphorin, Formanilide, Gelsemium preps., Hyoscyamine, Iron Salts, Liquor Bromo-Chloral Comp., Methylene Blue, Monobromacetanilide, Neuralgic Pills, Nitroglycerin, Phenacetin, Phenazone, Phosphorus, Quinine preps., Quininæ Hydrobrom., Salicylates and Salol.

Æthyl Chlorid., Aconiti Linim., Aconitinæ Ung., Belladonnæ Collodium et Tinct. Ætherea, Linim. and cum Chloroform, Chloral Hydras cum Camphor and cum Menthol, Chloroform, Chloroformum Aconiti, Delphinæ Ung., Menthol, Menthol cum Aconitina, Menthol Linim., Menthol Plaster, Methyl Chloridum, Methyl Salicylate, Morphinæ Oleat., Oleanodyne, Opii Linim. Veratrinæ Ung. All Anodyne Liniments.

Night Sweats.—Acid. Camphoric., Acid. Gallic., Acid. Hypophosph. and Hypophosphites, Acid. Sulph. Aromat., Agaricus albus and Agaricin, 'Atropine and inj. hypod., Atropine Methyl-bromide, Belladonna, Calcii Chlorid., Codeine, Coto and Cotoin, Guaiacol Carb., Homatropine, Hyoscinæ Hydrobrom., Hypophosphites, Ipecac. Co. Pulv., Iron Salts, Picrotoxin, Quinine preps., Sodii Telluras, Strychnine, Zinci Oxid.

Nipples, Fissures of, and Sore.—See **Fissures of Nipples.**

Nocturnal Emissions.—See **Incontinence.**

Nymphomania and Satyriasis.—Bromides, Camphor, Conium, Hyoscine, Tabaci Folia.

Obesity.—Alkalis and Alkaline Carbonates, Fucus Vesiculosus, Iodum, Potassii Iodidum, Saccharin instead of sugar, Sodii Mag. Sulph. Efferves., Thyroid gland, Iodo-thyrin. Also Aperient Waters, *q.v.*

Ophthalmia.—See **Conjunctivitis.**

Ophthalmia Tarsi.—*Acid. Boric. Lotio and Ung., Glycerini Plumbi Subacetatis Ung., Hydrarg. Oxid. Flav. Ung., Iodoform Ung., Lysoform, Sphagnol.*

Orchitis.—Acetanilide, Anemonin, Antimonials, Pot. Iod. Aconite, Phytolacca. All saline aperients.

Belladonna, Glyc. et Ung., Guaiacol, Iodi Tinct., Oleosa and Ung., Mercurial Plaster.

Otitis.—Acid. Sulphanilic., Aconite, Antimonials, Saline aperients, Sodii Sulphanilas.—*Aurinaria*, see List.

Otorrhœa. — *Acid. Boric. Insuffiat., Acid. Tannic. Glycerin., Alum and Bism. Insuffl. T.H., Alum Insuffl., Argent. Nit. and Bism. Insuffl. T.H., Calendula, Carbonis Deterg. Liq. (as Lotion), Iodoform Wool and Insuffl. cum Bismutho T.H., Iodol.—Aurinaria*, see List.

Ovarian Pain.—Ammonii Chlorid., Antipyrin, Castor. Tinct., Morphine preps., Pulsatilla, Sumbul Tinct.

Ozæna.—*Acid. Boric. Lot. and Ung., Acid. Carbolic. Buginarium, Aldehydi Vapor, Alumen, Alumin. Acet. Liq., Aristol, Creosoti Vapor, Cupri Sulph. Buginarium, Eucalypti Globuli Infus. and Tinctura, Europhen, Finsen Light, Hydro-*

cotyle Asiatica, Hydrogen Peroxide, Inula Helenium, Iodoformi Buginarium, Iodoformi Rosat. Ung., Lysoform, Menthol spray and pigment, Potass. Permangan. Lotio, Sanitas (toilet), Sodii Chlorinat. Liq., Sodii Chlorid., Sodii Silic. Sol., Thymaglycin, Thymol Lotio, Zinci Sulphocarb., Zinci Sulphas., see *Buginaria.*

Palpitation.—Aconite, Bromides, Cactina, Camphora, Cannabis, Cimicifuga, Convallaria, Digitalis, Valerianates. —See remedies for Dyspepsia.

Paralysis Agitans. — Hyoscina, Hyoscyamus, Hypophosphites, Iron Salts, Phosphorus, Physostigma, Strychnine. Certain mineral waters, as Baden-Baden, Teplitz.

Paralysis, Diphtheritic.—Ferri Iodid., Iron Salts, Nux Vomica, Pepsin, Strychninæ inj. hypod.

Paralysis, Hemiplegia.—Damiana, Ergota, Iron Salts, Nux Vomica, Phosphorus, Physostigma and Physostigmine.

Paralysis, Paraplegia.—Calcium and Sodium, Damiana, Ergota, Hypophosphites of Iron, Iron Salts, Phosphorus, Physostigma and Physostigmine, Rhois Tinct., Strychnine.

Parasites, Animal, on Skin.— *Benzol, Hydrarg. Ammon. Ung., Hydrarg. Oleat., Hydrarg. Perchlorid. Lotio and Ung., Lotio Hydrarg. Acetic, Naphthalin Ung., Naphthol Ung., Ol. Cajuput, Ol. Sassafras, Pyrethri Flores Pulv. and Tinct., Sapo Viridis, Staphisagria, Sulphur Baths Lotion and Ung., Sulphurated Lime Lotion.*

Parasites, Vegetable, on Skin.—*Acid. Boric., Acid. Carbolic., Acid. Chrysophanic Ung., Acid. Sulphuros., Formol, Hydrarg. Oleat., Lysoform, Phosphor. Ol., Picrotoxin Pigment., Sodii Hyposulphit. Lotio., Thymol Ung.*

Parasites, Intestinal Worms.—Acid. Filicic.(Tænia), Anacardii Tinct., Areca (Ascarides and Lumbrici), Bismuthi Sulphis., Cambogia, Cousso (Tænia), Filix Mas (Tænia), Hydrarg. Subchlorid., Jalapa, Kamala (Tænia), Mucuna, Naphthalene, Papain (Ascarides and Tænia), Pelletierinæ Sulph. and Tannas (Tænia), Santonin and Sodii Santonas (Ascarides and Lumbrici), Santoninoxim, Scammonium, Tenaïine, Terebinth. Ol., Thymol Carbonate. See also Ankylostomiasis.

Ferri Perchlorid. Enema, Quassia, Salt, or *Thymol as Enema (Ascarides).*

Parotitis (Mumps).—Aconite, Antipyrin, Aperients, Salicylates, Salines.

Glycerin of Belladonna to neck.

Pericarditis. — Digitalis, Levurine, Mercury preps., Nuclein, Opiates and Musk (to relieve pain), Potass. and Sodii Iodid., Salicylates.

Belladonna Emp. and Liniment.

Peritonitis.—Aconite, Antifebrin, Antipyrine, Digitalis, Hydrarg. Subchlorid. cum Opio, Opium, Opium and Belladonna, Veratrum Viride.

Turpentine or Belladonna, Stupes or Poppy-head fomentations.

Perspiration, Excessive.—Abies Canadensis, Acid. Agaric., Acid. Phosph. Dil., Acid. Sulph. Aromat., Atropine and inj. hypod., Atropine Methyl-bromide, Belladonna, Ergota, Jaborandi and Pilocarpine, Picrotoxin, Quinine preps.

Amyli Pulv., Diachyli Ung., Emol, Kaolin, Naphthol sol. in Alc. and Glycerin, Tannin, Zinci Oleat. Pulv. and cum Thymol., Zinci Oxid.

Perspiration, Fetid.—Mineral Acid and Vegetable Acids (Calcii Sulphas. as in Contrexeville Water) and Tonics.

Acid. Boric. Lotio. and Ung., Acid. Carbolic. Lotio and Ung., Acid. Salicylic. Pulv. cum Talco, Aluminii Acet. Lotio, Atropine or Belladonnæ Linim., Diachyli Ung., Glycerini Plumbi Subacet. Ung., Tannoform, Zinci Oleat. cum Thymol.

Phthisis.—Acid. Camphoric., Acid. Cinnamic., Acid. Hypophosph. and Hypophosphites, Acid. Lactic. and Lactates, Acid. Phenylacetic., Acid. Phenylpropionic, Allium preps., Arrhenal, Arsenic, Arsycodile, Atoxyl, Benzoates, Cacodylates, Calcii Chlorid., Calcii Hypophosph. and Phosph., Creosoform, Creosoti Carbonas, Creosoti Valerianas, Creosotum, Dionin, Elixir Creosoti, Emulsio Ol. Morrhuæ et Hypophosphitum, Emulsio Petrolei, Eucalypteol, Formaldelyde Inhalant, Fluoric Acid and Ammonium Fluoride inhalations, Glycerophosphates, Guaiacol and Carbonate, Guaiacol Cacodylas, Camphoras, Cinnamas, or Phosphas, Guaiacol-Salol, Heroin, Iron Salts, Lachnanthes, Lecithin, Liq. Arsenic. Cinnamylic., Lofotol, Maltolivine, Marrubin, Morrhuæ Ol., Oleo-Creosote, Oleum Olivæ cum Acido Oleic, Ol. Morrhuæ c. Creosoto, Ovolecithin, Oxygen, Pancreatin, Pepsin, Phenol Sodii Sulpho-Ricinas, Piscidia, Prunus Virginiana, Quinine preps., Resorcin (Laryngeal), Salicin, Sanosin, Sodii Hypophosph., Somatose, Strontium Cinnamate, Thiocol, Tuberculin R., Vanadates, Verbascum Thapsus, Urea.

Piles.—See **Hæmorrhoids.**

Pityriasis.—*Acid Boric. Lotio. and Ung., Acid. Chrysophanic Ung., Boracis Glycerin. and Lotio, Glycerini Plumb. Subacet Ung., Gynocardiæ Ung., Huile de Cade, Lotio Resorcini, Picis Ung.*

Plague, The.—Acid. Carbolic, Antitoxic Serums of Haffkine and Yersin.

Pleurisy.—Aconite, Ammon. Acet. Liquor, Antimony, Apocynum cannabinum (for Pleuritic effusion), Bryonia, Jaborandi, Morphine preps., Potass. Iodid., Pyranum, Quinine preps., Sodii Salicylas.

Antiphlogistine, Blisters, Thermofuge.

Pleurodynia.—See **Myalgia.**

Pneumonia.—Acid. Salicylic., Aconite, Ammon. Carb. and Chlorid., Antimony, Caffeine, Chloral and Digitalis, Creosoti Carbonas, Digitalis, Hyoscyamus, Hypophosphites, Morphine preps., Pilocarpin. Quinine preps., Salines, Veratrum viride.

Antiphlogistine, Oxygen, Thermofuge.

Poisons.—See **Antidotes and Emetics.**

Post-Partum Hæmorrhage.—See **Hæmorrhage.**

Pregnancy, Vomiting of.—Antipyrine, Belladonna, Bismuth preps., Cerii Oxalas, Chloral, Chloroform, Creosote, Hydrocyanic Acid, Ingluvin, Ipecac. Vin., Iridin, Menthol, Morphine preps. and inj. hypod., Nux Vomica, Pepsin, Quinine preps., Spt. Nucis Juglandis.

Prurigo.—Arsenic, Bromides, Iron Salts, Pilocarpine, Quinine preps.
Acid. Boric. Lotio and Ung., Acid Carbolic. Lotio and Ung., Acid Oxy-Napthoic., Borax, Cocainæ Ceratum, Ichthyol. Iodoformi Ung., Liq. Ammon. Dilut., Liq. Hydrarg. Perchlor., Liq. Plumbi Subacet. Dilut., Lysoform, Pilocarpine, Staphisagria, Sulphur Ung., Tar, Ung. Rusci. Co., Ung. Sulph. cum Hydrarg.

Pruritus Ani, Vulvæ, &c.—*Acid. Carbolic. Lotio and Ung., Acid. Salicylic. Ung., Acid Sulphuros. Lotio, Alkalis (Lotion of), Carbonis Liq. Lotio., Chloretone, Chloroformi Ung., Cocain, Cocainæ Ceratum, Conii Ung., Epicarin, Eucaine, Gallæ cum Opio Ung., Glycerini Plumbi Subacet. Ung., Hydrarg. Oleat and cum Morphinâ, Hydrarg. Subchlorid. Ung., Lysoform, Mentholeate, Menthol et Boracis Lotio., Orthoform, Potass. Cyanid. Lotio., Tannin, Ung. Rusci. Co.*

Psoriasis.—Arsenic preps., Cacodyl preps., Granula Dioscoridis. Gynocardiæ Ol., Hydrarg. Iodid. Viride, Iron Salts, Morrhuæ Ol., Levico Water, mild and strong, Phosphorus, Pil. Asiatica, Quinine preps., Resinol, Sulphur.
Acid. Carbolic Ung., Acid. Chrysophanic Ung., Acid. Pyrogallic Ung., Acid. Salicylic Ung., Anthrarobin, Betulæ Pyrolig. Ol., Carbonis Liq. Lotio, Epicarin, Eugallol, Eurobin, Europhen, Fagi Pyrolig. Ol., Gallacetophenone, Gynocardiæ Ol., Huile de Cade and Ung., Hydracetin, Hydroxylamine, Icthyol, Ichthyol Resorcin and Salicyl, Lanoline, Lenigallol, Lenirobin, Lysoform, Mollin, Naphthol, Picis Ung., Rusci Pyrolig. Ol., Sulphides (in Baths), Sulphuris Hypochloritis Ung., Thio-Resorcin, Ung. Acidi Pyrogall. Oxidat., Ung. Rusci Co.

Puerperal Fever.—Acid. Boric, Antifebrin, Antipyrine, Anti-Streptococcic Serum, Ferri Perchlorid., Jaborandi, Pilocarpine, Opium, Quinine, Terebinth. Ol.

Pupil of Eye: to contract and dilate.—See **Eye.**

Purpura.—Acid. Citric., Acid. Gallic., Acid. Sulphuric. Dil., Calcii Chloridum, Ergota, Iron Salts, Lime Juice, Phosphorus, Quinine preps., Terebinthinæ Oleum.

Pyæmia.—Acid. Salicylic, Anti-Streptococcic Serum, Eucalyptus Globulus, Kairine, Levurin, Nuclein, Quinine preps., Resorcin, Salicin, Sulphites.

Pyelitis.—Benzoates, Benzoic Acid, Collinsonia Canadensis, Erigeron Oil.

Pyrexia.—See **Fever.**

Pyrosis.—Acid. Hydrocyanic., Acid. Hydrochlor. Dil., Acid. Nit. Dil., Acid. Sulphuros., Bismuth preps., Carbo Ligni, Cerii Oxalas, Magnesia, Sodii Bicarb., Sodii Sulphocarbolas.

Quinsy.—See **Throat Inflammation.**

Remittent Fever.—Apiol, Eucalyptus Globulus, Quinine and other Cinchona Alkaloids, Salicin, Salicylates, Salol, Warburg's Tincture.

Rheumatism, Acute.—Acid. Benzoic and Benzoates, Acid. Salicylic and Salicylates, Acetanilide, Acetopyrin, Aconite, Actæa and Cimicifugin, Agathin, Antifebrin, Antipyrine Asaprol, Aspirin, Caffeine-Chloral, Colchicum and Colchicin, Ferri Perchlorid., Fluor-rheumin, Formanilide, Lactophenin, Lemon or Lime Juice, Methyl Salicylas, Opium, Ozonic Ether, Phenazonum, Phenocoll Hydrochlor., Potass. Bicarb. Cit. and Nit., Quinine preps., Rheumatin, Rubidium Iodid., Salicin, Salicylamide, Salipyrin, Salol, Salocoll, Salophen, Sodii Dithio-salicylas, Tolysal.

Rheumatism, Chronic.—Acid Hydriodic and Iodic, Actæa, Amyl Salicylas, Antim. Sulphurat., Arsenic, Aspirin, Cimicifuga, Cinchonidinæ Salicylas, Citarin, Colchicinæ Salicylas, Colchicum, Conf. Guaiaci Comp., Euphorin, Ferri Iodid. Syr., Ferri Salicylas, Fluor Rheumin, Gaultheriæ Oleum, Gelsemium, Granular Eff. Piperazine and Phenocoll, Guaiacum, Ichthyol, Ichthyol Salicylate, Lithii Hippuras, Lycetol, Methylene Blue, Naftalan, Pelletierina, Phytolaccin, Pilocarpina, Piperazina, Podophyllin, Potass. Iodid. and cum Quininâ, Pyranum, Rhus, Safrol, Sodii Boro-Salicylicas, Ulmaren, Uricedin, Ursal, Vanadates.

Atropinæ Linim., Bellad. Linim. and Linim Co., Belladonnæ Chloroformum and Tinct. Ætherea, Betol, Camph. Co. Linum, Capsici. Emp. and Linim., Chloral cum Camphor., Eucalyptus Oil, Gaultheriæ Oleum, Gyrol Pencils, Mesotan, Methyl Salicylate, Opii Linum., Pini Sylvest. Oleum, Salicylate Plaster, Ulmaren.

Rheumatoid Arthritis.—Actæa, Arsenic, Aspirin, Colchicum, Ferri Iodid., Lithii Carb. and Citras., Morrhuæ Ol., Potass. Bromid. and Iodid., Quinine Salicylas, Thryroid.

Dowsing Radiant Heat, Sulphides (baths of), "X" Rays.

Rickets.—Acid. Phosph. Dil., Calcii et Ferri Phosph. Pil., Calcii Hypophosph. Syrup., Calcis. Liq. Sacch., Calcii Chlorid., Calcii Phosph., Calcii Lactophosph. Syr. and cum Ferro, Capsulæ Cruoris, Emulsio. Ol. Morrhuæ cum Glycerophosph., Ferratin, Ferri Phosph. Syr. and Comp., Ferri Vinum, Glycerophosphates, Liq. Ferri Hypophosph. Comp., Maltolivine, Marrubin, Morrhuæ Ol., Phosphorus, Plasmon, Saccharated, Sanatogen, Somatose, Thymus gland, Wheat Phosphates.

Ringworm.—See **Tinea.**

Saint Vitus's Dance. See **Chorea.**

Salivation.—Acid. Hydroch. Dil., Atropine and Belladonna, Chlorates, Coto.

Acid. Boric., Alumen, Borax, Chlorates, Creosoti Vapor, Lysoform.

Sarcinæ.—Acid. Sulphuros., Calcii Chlorid., Betanaphthol, Salol, Sodii Hyposulphis, Sodii Sulphis, Sodii Salicylas, Lavage.

Scabies.—*Acid. Oxy-Napthoic, Calcis. Sulphurat. Lotio, Cyllin, Epicarin, Hydrarg. Perchlorid. Ung., Liq. Carbonis Detergens, Lysoform, Napthalin Ung., Naphthol Ung., Potass. Sulphurat. Balnea, Styracis Ung., Sulphur Ung., Sapo Viridis, Ung. Rusci Co.*

Scalds.—See **Burns.**

Scarlatina.—Acid. Salicylic., Aconite, Ammon. Carb., Belladonna, Ozonic Ether, Potassii or Sodii Chloras, Eucalypti Tinct.

Sciatica.—Acetanilide, Acetopyrin, Actæa and Cimicifugin, Agathin, Agurin, Alphol, Colchicum and Colchicin, Conf. Guaiaci Comp., Lithii Citras, Morphinæ inj. hypod., Phenazone, Piperazina, Potass. Iodid., Potassii Osmas, Pyranum, Salipyrin, Salol, Sodii Salicylas, Tereb. Ol., Uricedin.

Aconitinæ Ung., Bellad. Linim., Chloroform Linim., Dowsing Radiant Heat, Ether injection, Menthol, Menthol cum Camphorá, Menthol Linim., Methyl Chloridum, Veratrinæ Ung., "X" Rays.

Scrofula.—Barii Chlorid., Calcii Chlorid., Calcii Phosph., Calcii Sulphid., Calcinol, Ferratin, Ferri et Calcii Phosph. Pil., Ferri Iodid. Syr., Ferri Phosph., Hydrarg. Iodid. Virid., Iodoform., Iodum., Maltolivin, Marrubin, Morrhuæ Ol., Morrhuæ Ol. Emuls., Ol. Olivæ c. Acid Oleico, Quinine preps., Solveol, Syrup. Iodo-Tannic.

Scurvy.—Lime Juice, Lemon Juice, Phosphorus, Potass. Chloras and Citras, Sassafras.

Sea-Sickness.—Acid. Hydrobromic., Antipyrine, Amyl Nitris, Chloralamide, Chloral Hydras, Chlorobrom, Chloroform and Tinct. Co., Cocainæ Hydrochlorid., Cocaine tablets and solutions, Eucalypti Troch., Hyoscyamina, Morphinæ inj. hypod., Nitroglycerin Tablets ($\frac{1}{200}$ gr.), Phenazone, Potass. Bromid., Sodii Bromid., Sodii Nitris.

Counter-irritants to stomach, Caliano's Belt, Icebags to the spine.

Septicæmia.—See **Pyæmia.**

Shingles.—See **Herpes Zoster.**

Sleeplessness.—See **Insomnia.**

Snake-bite.—See **Bites and Stings.**

Spasm.—Aconite, Æther, Ammon. Arom. Spt., Amyl Nitris, Atropinæ inj. hypod., Cajuput. Ol., Camphora, and Camphor. Spt. Fort., Chloroform, and inhaled, Chloromorphiæ Liq., Çonina, Erythrol Nitrate Tablets, Mannitol Nitrate Tablets, Menth. Pip. Ol., Mistura Ætheris cum Ammonia, Mistura Ammoniæ cum Æthere, Opium, Piscidia.

Spermatorrhœa.—See **Incontinence of Semen.**

Spina Bifida.—*Iod. Linim., Iodo-Glycerin inject.*

Sprains.—*Arnica, Fomentations (hot) of Poppy-head or Belladonna, or cold with vinegar or spirit lotions, Lead and Opium Lotion, Lotio Ammonii Chloridi.* When chronic, *Liniments of Belladonna, Chloroform, Camph. Co., Lin. Tereb. Acet., Radiant Heat, "X" Rays.*

Stomatitis.—Eucalypti Globuli Tinct., Hydrastis, Potassii Chloras, Sodii Chloras.

Acid. Boric., Acid. Carbolic, Acid. Salicylic, Acid. Sulphuros, Alumen, Borac. Glyc. and Mel., Calcis Aqua, Cupri. Sulph., Myrrhæ et Boracis Tinct., Sodii Chloras.—See *Pastils.*

Sunstroke.—Ammon. Carb., Apomorphina, Atropinæ inj. hypod., Digitalis. Ergot, Morphinæ inj. hypod., Quinine.

Enemata purgative, Sinapis Emplast.

Syphilis, Constitutional.—Ammon. Iodid., Amyli Iodid., Auri Chlorid., Barii Chlorid., Carbolas, Condurango, Ferri Iodid. Syrup, Hydrarg. cum Cretâ, Hydrarg. Cyanid. Pil., Hydrarg. et Potass. Iodid., Hydrarg. Gallas, Hydrarg.

Iodid. Rub. and Inj. Hypod., Hydrarg. Iodid. Viride, Hydrarg. Perchlorid., Hydrarg. Pil., Hydrarg. Subchlorid., Hydrarg. Tannas, Hydriodol, Iodalbacid, Iodinol, Iodum, Manaca. Hydrargyri Benzoas, Mercurol, Phytolacca, Potass. Iodid., Rubidii Iodid., Salicylas, Sarsa, Sodii Iodid., Stillingia, Strontii Iodidum, Succinimidum and Thymloacetas, Succus alterans, Syrupus Acidi Hydriodici.

"Grey Oil" inject., Hydrargyri Lanolinum, Hydrarg. Oleat. and cum Morphinâ, Hydrarg. Ung., Hydrarg. Oxid. inject. with Asparagin and Formamide, Mercuric Ethylene Diamine.

Syphilis, Skin Diseases.—*Europhen, Hydrarg. Ammon. Ung., Hydrarg. Emplast., Hydrarg. Nit. Ung, Hydrarg. Oleat., Hydrarg. Perchlorid. Ung., Hydrarg. Subchlorid. Balnea Fumigation and Ung., Hydrarg. Ung. Iodoformi Gossypium and Ung., Iodinol, Resorcin.*

Syphilitic Sore Throat.—*Alum Garg., Borax Garg. and Mel Boracis, Chlorine or Sodii Chloras Garg. and Troch., Hydrarg. Cynaid. Garg., Hydrarg. Perchlorid. Garg. and Pastil., Insufflatio Iodoformi Comp. and Pastil., Potass. Chlorat. Garg., Pastil. and Troch.*

Syphilitic Ulcers.—*Acid. Chromic., Aristol, Collod. Salicylic. c. Hydrarg. Perchlor., Di-iodo-thio-resorcin, Europhen, Hydrarg. Acid Nit. Liq., Hydrarg. Flava and Nig. Lotio, Hydrarg. Naphthol, Hydrarg. Oleat. and cum Morphinâ, Hydrarg. Subchlorid., Iodoform, and Collodium cum Iodoformo, Iodoform Wool, Iodoformi Ung., Iodol, Resorcin, Thio-resorcin, Zinci Chlorid. Iodid. and Nitras.*

Tænia.—See **Parasites, Intestinal.**

Tetanus.—Acid. Carbolic., Anæsthetics (to relax spasm), Antitoxin, Amyl Nitris, Cannabis, Chloral Hydras, Coninæ Hydrobromid., Conine Curara, Gelsemium, Hydrogen Peroxide, Morphine, Opium, Pelletierine, Phenol inj. hyp., Physostigmine, Pilocarpina, Strophanthus, Urethane.

Thirst, to Relieve.—Acid. Citric., Acid Drops, Acid. Phosph. Dil., Acid. Sulph. Aromat., Acid. Tartaric., Coca, Elixir Acid., Haustus Imperialis, Pot. Chlor. Tablets, Pot. Cit., Potass. Tart. Acidus.

Throat, Inflammation of, and Tonsillitis.—Acid. Salicylic., Aconiti Tinct. and Pastil, Antimony, Antipyrine, Belladonna, Ferri Salicylas, Jephson's powder, Liq. Ferri Perchlor, Quininæ Salicylas, Salicylates, Sodii Benzoas, Solubes (various), see Index.

Benzoin. Tinct. Vapor, Chlorates in Troch., Cocaine (Pigment of), Formalin Pigment, Guaiacum Trochisci, Iodi Vapor, Thymaglycin, Juniperi Ol. Vapor.

Throat, Relaxed Sore.—

Acid. Carbolic. Pastil., Acid. Tannic Garg. and Glycerin., Alumen and Glyc. Aluminis, Ammonii Chloridi Vapor, Argent. Nit., Benzoin. Tinct. Vapor, Bismuth. Pastil., Catechu Insuffl., Eucalyptus Gum Insuffl., Ferri Perchlorid., Pigment., Ferro. Alumen, Geranium, Guaiaci Troch., Hydrastis as gargle, Pini Sylvest. Vapor, Uranii Nitras. Solubes (various), see Index.

Thrush.—See **Aphthæ.**

Tinea Favosa, and Sycosis.—*Acid. Carbolic. Glycerin., Acid. Sulphuros, Anacardium, Chrysarobinum, Cupri Oleat.*

Ung., Formaldehyde, Hydrarg. Oleat, Hydrarg. Perchlorid. Lotio., Ichthyol, Iodi Linim., Lanoline, Nicotinæ Salicylas, Picrotoxin Pigment, Sodii Hyposulph. Lotio, 'X' Rays.

Tinea Tarsi.—See **Ophthalmia Tarsi.**

Tinea Tonsurans.—As for **T. Favosa** and—*Anacardii Oleum, Cantharid. Pigment, Coster's Paste, Formaldehyde, Hyd. Oleat. Ung., Hydrarg. Nit. Acid. Ung., Hydronaphthol Plaster, Iodi et Olei Picis Pigment., Iodized Phenol, Lysoform, Sphagnol.*

Tinea Versicolor.—*Acid. Chrysophanic., Acid. Sulphuros. Borac. Glycerin., Formaldehyde, Gynocard. Ol., Lotio Calci Sulphurati, Sodii Hyposulph. Lotio.*

Toothache.—Acid. Hydrobromic, Butyl-Chloral Hydras, Delphinine, Gelsemin., Gelseminæ Hydroch., Gelsemium, Morphinæ inj. hypod., Piscidiæ Ext. Fluid., Quin. Tinct. Ammon.

Acid. Arsenios., Acid. Carbolic., Butyl-Chloral cum Menthol, Caryophyll. Ol., Chloroform cum Camph., Chloroform cum Mastic, Cocaina, Creosotum, Eugenol, Iodi et Aconiti Tinct., Liq. Sodii Carbolatis, Opii Tinct., Pasta Arsenicalis, Potassii Permanganas, Pyrethri Tinct., Sodii Peroxidum.

Trichinosis.—Ergota, Ergotin, Sclerotic Acid, Liquor Arsenicalis.

Tuberculosis.—See **Phthisis.**

Typhoid Fever.—Acid. Salicylic. and Salicylates, Ammon. Carb., Anti-Typhoid Inoculation, Aristochin, Carbolic Acid, Cinchona Alkaloids, Ergota (for Intestinal Hæmorrhage), Eucalypteol, Eucalyptus Globulus, Hydrarg. Naphtholacetas, Hydrogen Peroxide, Iodopyrin, Naphthalene, Naphthol, Salol, Sodii Acid. Sulph. as water disinfectant, Sodii Chloras, Thallin, Thymol, Tribromophenol, Urotropine.

Guaiacol.

Ulcers.—*Acid. Boric. Lotio and Ung., Acid. Carbolic. Lotio and Ung., Acid. Salicylic. Gossypium and Ung., Actol, Argent. Nit., Belladonnæ Glycerin., Bismuthi Oxyiodid., Carbonis Cataplasm., Chartazinc, Collodium, Cupri Oleat. Ung., Eucalembroth gauze, Eucalypti Ung., Eucalyptus Sawdust, Fermenti Cataplasm., Hetocresol, Hydrogen Peroxid., Iodoform, Iodol, Itrol, Izal, Lysoform, Naphthalin, Orthoform, Oxygen, Plumbi Subacet. Glycerin. and Ung., Potass. Permang., Resinæ Ung. and Res. Ung. cum Chlorof., Resorcin, Salol, Sanitas, Sanoform, Solutol, Ung. Pheno-Boric, Zinci Chlorid., Zinci Oleat. Ung., Zinci Sulph. Lotio.*

Urine, Incontinence of.—See **Incontinence.**

Urine, Tests for Albumin.—See page 594.

Urine, Tests for Sugar.—See page 602.

Uræmia.—Amyl Nitris, Apocynum Cannabinum, Caffeine, Digitalis, Elaterin. Pulv. Co., Hydrarg. Subchlor., Jaborandi and Pilocarpine, Jalapæ Pulvis Co., Lithii Hippuras, Nitroglycerin, Saline Purgatives, Scilla, Scoparii Succus, Sodii Benzoas, Thialion, Urosin.

Urticaria.—Antipyrine, Apis Mellificæ Tinct., Bromides, Mistura Alba, Sodii Bicarb.

Acid. Benzoic. Lotio, Acid. Boric. Lotio, Acid. Carbolic

Lotio, Acid. Hydrocyanic Dil. Lotio, Bromocoll, Chloroform. Ung., Cocainæ Ceratum, Plumbi cum Lacte Lotio, Sodii Carb. Balnea.

Uterus, Catarrh of.—See **Catarrh, Uterine.**

Uterus, To cause Contraction of.—Borax, Caulophyllin, Cimicifuga, Cornutine, Ergota, Ergotin, Ergotinine, Gossypii Rad. Cortex., Hamamelis, Hydrastis, Sclerotic Acid, Ustilago Maid's.

Variola, To prevent Pitting.—*Acid. Boric. Ung., Acid, Carbolic Ol., Amyli. Glyc., Argent Nit., Calcis Linim., Collodium, Finsen Red Light, Hydrarg. Ung., Styptic Colloid., Zinci Oleat. Ung.*

Vertigo.—Ammon. Spt. Arom., Auri Bromid., Caffeine, Guarana, Quininæ Valerian., Strychnine, Zinci Valerianas.

Vomiting. — Acid. Carbolic, Acid. Hydrocyanic. Dil., Ammon. Bromid., Beef Essence (Brand's), Bismuth Preps., Calcii Chlorid., Calcis Aqua, Cerii Oxalas, Chloral, Chloroform preps., Coca and Cocaina, Ingluvin, Liquor Sodæ Effervescens, Magnes. Carb. Liq., Morphinæ inj. hypod., Nitroglycerin, Nux Vomica, Potass. Bicarb. cum Acid. Citric. Mist. Efferves., Sodii Phosph. Effervescens., Vin. Ipecacuanhæ in minim doses. Of infancy, Sodium Bicarbonate.

Warts and Corns.—*Acid. Acetic Glaciale, Acid Carbolic., Acid. Chromic., Acid Nit., Acid Picric, Anacardium, Collodium Callosum Collodium Salicylicum, Collodium Salicylicum c. Acid., Lactic, Formalin, Iodi Linim., Papayotin, Paraform Collodion, Potassæ Liquor, Thuja.*

Whooping-Cough. — Acid. Benzoic. and Benzoates, Acid. Carbolic, Acid. Hydrocyanic Dil., Alumen, Amyl Nitris, Anemonin, Antipyrine, Antispasmin, Antitussin, Apomorphinæ Hydrochlorid. (minute doses), Aristochin, Atropine, Belladonna, Benzol, Bromides, Bromoform, Bryonia, Calcis Aqua, Camphora Monobrom., Cannabis, Chloral, Codeine Jelly, Conium, Ergot, Gelsemium, Glycaphorm, Grindelia, Lobelia, Morphine preps., Ozonic Ether, Phenacetin, Phenazonum, Rubidium-Ammonium Bromide, Senega, Stramonium, Syrup cum Narceina, Zinci Oxid. and Sulphas. *Inhalation of Acid. Fluoric., Formalin or Naphthalene, or Pyridine, Carbon Dioxide per rectum, Himrod's Cure, Succini Ol. as Liniment.*

Worms.—See **Parasites, Intestinal.**

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